

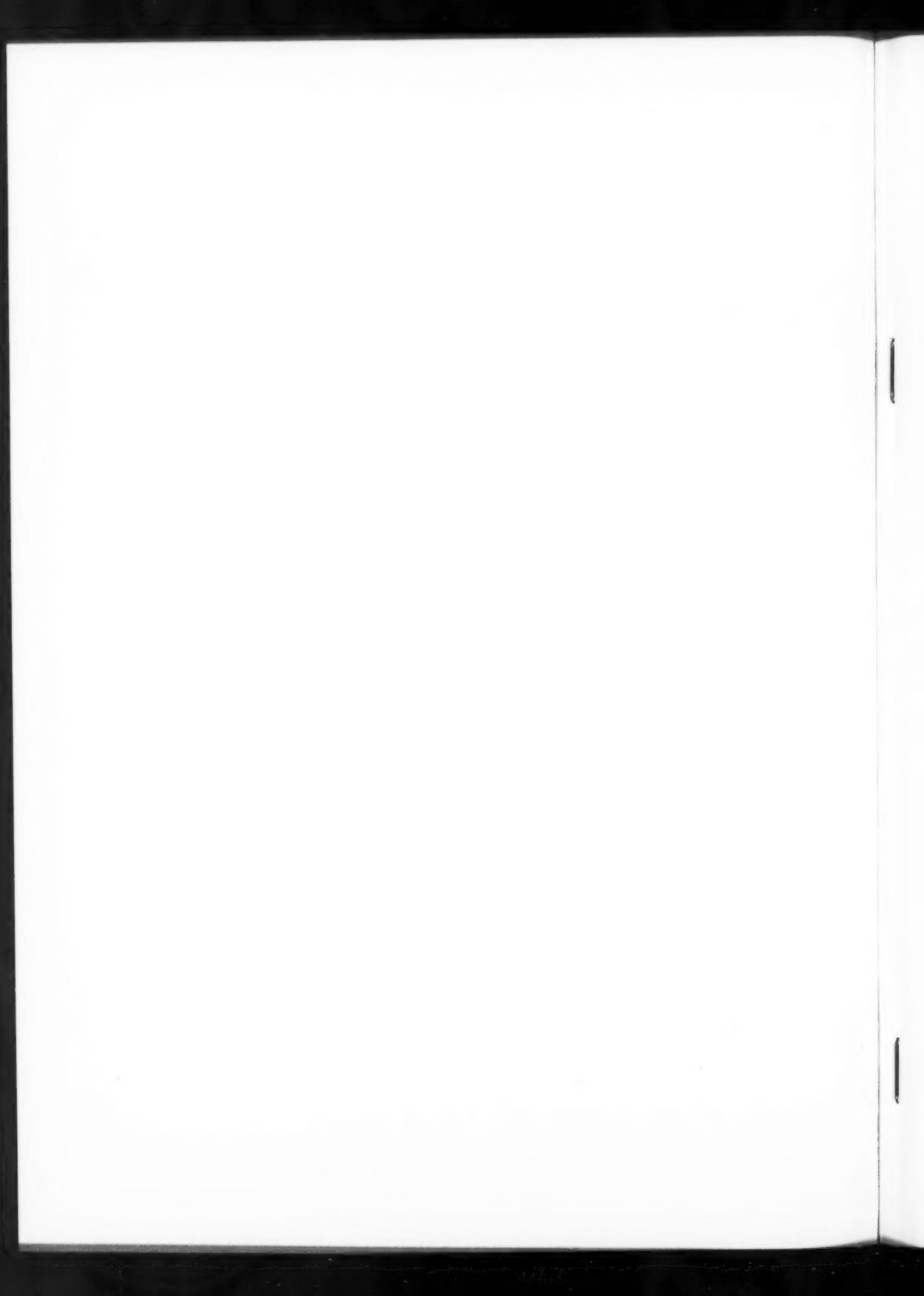
**Dental**

**Abstracts**

*a selection of world dental literature*

AMERICAN DENTAL ASSOCIATION

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*A selection of world dental literature*

*Lon W. Morrey, D.D.S., editor  
N. C. Hudson, assistant editor*

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purposes**

1. *To present a selection of pertinent literature representative of all points of view within the profession;*
2. *To provide, by a few hours' reading, a survey of the significant advances being made by dentistry throughout the world, as reflected in current dental literature; and*
3. *To supply enough data in each abstract and digest that the reader may determine whether he wishes to refer to the original article for more complete information.*

*The abstracts are grouped in broad classifications. The specialist will learn from this periodical of work done in other fields as well as in his own. The general practitioner will be able to keep abreast of current knowledge in the various specialties. Unless otherwise indicated, the original article is in the language implied by the title of the magazine in which the article appeared.*

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### The application of the rubber dam in the preschool child

Paul Starkey. *J.Dent.Children* 24:230-236  
Dec. 1957

The author's practice is limited to dentistry for children; more than three fourths are of preschool age. The rubber dam is especially indicated with patients in this age group. These children have an abundant flow of saliva and a seemingly uncontrollable tongue and facial musculature. The restorations placed in their teeth are small and must be inserted in ideal dry conditions. The rubber dam is used virtually on every patient two and a half years old or older. It is difficult to work on these patients without the use of the rubber dam. The child relaxes if the dam is used, and, because of the lack of stimuli, the salivary glands slow down their secretions. The tongue seems to find a relaxed position and operative procedures progress more rapidly. The time required to operate on the preschool child is cut in half, and the quality of the work is improved by using the rubber dam. The anatomy of the deciduous tooth is especially adaptable to application of the dam.

The armamentarium required for a simple rubber dam technic consists of a 5 by 5 inch sheet of rubber dam, dam punch, dam forceps, an Ivory no. 3 rubber dam clamp and a Young's rubber dam frame.

In filling an occlusal cavity in a mandibular second deciduous molar, the largest die in the punch is used to place a hole in the proper position in the dam. The site for the hole may be determined by placing a forefinger on the operator's side of the dam and carrying it to the patient's mouth and touching the tooth to be isolated. The no. 3 clamp is placed in the hole and the operator places the forceps in the clamp. The assistant takes hold of the top two corners of the dam (Fig. 1). Standing behind the patient, she

carries the dam towards the face as the operator carries the clamp towards the tooth from the front of the patient. He places the clamp on the tooth, releases the forceps, lays it on the bracket table and picks up the Young's rubber dam frame and carries it to the patient's face. The assistant hooks the top two corners of the dam while the operator attaches the bottom two corners and the sides (Fig. 2). The operator uses a right-angle explorer to pick up the dam from the wings of the clamp and flip it off. The clamp can be adjusted if necessary. If the dam tends to become dislodged while the clamp is being adjusted, the difficulty can be overcome by using two fingers

Figure 1





Figure 2

(one on each side of the clamp) to hold the dam cervically while the clamp is being adjusted. The whole procedure requires less than 30 seconds.

Applications of the rubber dam for isolating the first and second deciduous molars, the deciduous anterior teeth, the second deciduous molar alone, and a mandibular molar which has not erupted completely, also are described.

820 Fidelity Building, Dayton 2, Ohio

#### **Child psychology and thumbsucking**

Walter Müller. *Deut.Zahnärztebl.* 12:142  
Feb. 22, 1958

Like the weather, politics and atomic power, the problem of thumbsucking is frequently discussed in dental and medical literature, unfortunately with little constructive thought.

The discussions usually are centered on the action of thumbsucking and not on the thumbsucking child. At first this may seem to be an unnecessary differentiation, but in effect most authors deal with the symptom rather than with the condition.

Children all over the world suck their thumbs or other fingers with obvious pleasure before and after eating, between meals and during the night. Mothers scold them but obviously with little effect.

Psychologists have stated that thumbsucking is a habit which has its roots in a sexual expression which starts in early infancy. The thumbsucking child is satisfying an urgent need, seeking gratification for real or imagined lack of love and affection. He is not aware, however, of the reasons for this habit because he has adopted subconsciously an oral satisfaction which—in his world—is the pleasure most readily attainable.

At a recent meeting of British child psychologists, a professor of the University of Oxford stated that thumbsucking is an important part of the normal behavior pattern of infants and children and has no unfavorable physical effects on teeth or jaws. Any attempt by the parents, teachers or dentists to break this habit will produce frustration. According to this authority on child psychology, about 50 per cent of English children, taken at random, sucked their thumbs for a prolonged period of time. Dental examination revealed that the thumbsucking children had no more oral defects (malocclusions) than the other 50 per cent who had abandoned this habit before the second year.

"Thumbsucking," the English child psychologist continued, "is for the child a pleasant and harmless preoccupation, a mere pastime amusement, which can be considered as an equivalent to the smoking of adults."

Every dentist, however, is familiar with the damage done to oral tissue and occlusion by continued thumbsucking. Whether malocclusion can be produced by habitual thumbsucking alone or by a combination with other factors such as frequency, intensity, direction and force of pressure, inherited susceptibility to tooth displacement or tonicity, is difficult to determine. Statistically and clinically, however, it appears certain that thumbsucking is a not inconsequential etiologic factor of malocclusion and malposition of the teeth.

There is no service a dentist can render which will win more whole-hearted appreciation from the parents than correction of the thumbsucking habit and prevention of oral defects.

*Römerhof, Zurich, Switzerland*

**The use of heterogeneous anorganic bone  
in periodontal bone grafting:  
a preliminary report**

Anthony H. Melcher. *J.D.A. South Africa*  
13:80-84 March 1958

Nine patients with alveolar bone resorption resulting from periodontal disease were treated by implantation of heterogenous anorganic bone.

Anorganic bone of particle size 16/20 mesh was prepared by treating ox shin bone with ethylenediamine according to the method of Losee and Hurley (1956). The bone was placed in glass ampules, autoclaved at 110° C. for one hour, and stored at room temperature. Six implants were placed in infracrestal defects and three in supracrestal defects.

After routine prophylaxis and root planing, the affected teeth were immobilized by means of fixed splints and complete occlusal equilibration was undertaken. Under local anesthesia, a mucoperiosteal flap was raised. The granulation tissue in the defect was removed, and the free surface of the alveolar bone and the involved cementum were curetted. The region was allowed to fill with blood, and the anorganic bone chips then were placed in position. The flap was closed with interrupted sutures and the area covered with a periodontal pack.

The results of the treatment were evaluated clinically and roentgenographically at intervals, up to eight months postoperatively.

In all instances the implants apparently were accepted. No untoward sequelae or inflammatory reaction occurred in excess of that to be expected after periodontal surgery. In all instances a progressive diminution in the density of the graft, viewed roentgenographically, occurred for periods ranging from three to six months postoperatively. This period of rarefaction was followed by the appearance of an increasingly denser substance, which replaced the implant. The new



*Above: An intrabony defect distal to the lower right first molar. Center: Immediate postoperative view. The heterogenous anorganic bone implant is indicated by the arrows. The affected tooth was stabilized with a welded molar band splint. Below: View five months postoperatively. Note the partially calcified new bone indicated by the arrow*

material gradually assumed the appearance of alveolar bone; in one instance, a lamina dura developed.

Some of the more superficial anorganic bone chips were resorbed without replacement by alveolar bone.

One of the implants was placed in a complex intrabony defect involving the distal, buccal and apical parts of the mesial alveolar bone of a lower right second bicuspid. Six months later, a new flap was raised and the new bone inspected. The

buccal part of the defect was obliterated completely, and the new bone in the mesial and distal defects was of clinically normal appearance and texture.

Roentgenograms taken at regular intervals indicated that resorption of the implant took place concurrently with the deposition of new bone.

The three supracrestal defects treated showed no noticeable improvement. Some regeneration of bone occurred in the intrabony defect, but the over-all height of the alveolar bone had not increased.

If heterogenous anorganic bone proves to be a successful material for implantation, some aspects of bone grafting will be facilitated by its use. The material can be prepared from any mammalian bone, and stored, not necessarily aseptically, at room temperature. This allows for the accumulation of large stocks of bone and easy transportation to remote areas.

Although it is too early, and the number of cases too small, to evaluate the effect of grafting anorganic bone into alveolar bone defects, the results of this study are fairly encouraging. Heterogenous anorganic bone is wholly acceptable to anorganic tissues. The bone generated in response to the implants is clinically normal in appearance and texture. The treatment of subcrestal defects by implantation was more successful than the treatment of supracrestal defects.

*Oral and Dental Hospital, University of the Witwatersrand, Johannesburg, South Africa*

#### **Effect of phenol camphor on gingival tissue**

Jens Waerhaug and Harald Loe. *J. Periodont.*  
29:59-66 Jan. 1958

Removal of the crevicular epithelium is a prerequisite for reattachment of periodontal fibers. Clinical and histologic evidence indicates that phenol camphor is a valuable aid in attaining reattachment.

An investigation was undertaken to evaluate the efficiency of phenol camphor (75 per cent phenol and 25 per cent camphor) in removing the crevicular epithelium, alone and in combination with soft tissue curettage, and any harmful effects from such treatment.

Twenty-two buccal pockets in four healthy

dogs were packed with cotton strings saturated with phenol camphor. In seven pockets in one dog the soft tissue side was curetted subsequent to the packing. The tissue was allowed to heal for from two hours to 39 days. The following conclusions seem to be justified:

1. A cotton string can be packed to the deepest point of the epithelial cuff if the alveolar crest is not above it.

2. Phenol camphor necrotizes the epithelium and part of the connective tissue. It acts as a fixative on the soft tissue and may delay proteolysis, but it does not appear to prevent the final healing.

3. The necrotic tissue is walled off by a layer of proliferating fibroblasts and emigrated leukocytes which prevent spreading and start the repair.

4. The epithelial lining of the pocket is apparently more efficiently removed when the phenol camphor packing is combined with soft tissue curettage.

5. Complete healing with readaptation of a normal epithelial cuff to the gingival margin will ensue in all instances except those where bacterial plaque has been retained on the tooth.

6. Phenol camphor packing facilitates to some degree retention of bacterial plaque, and hygienic measures should be taken after the treatment.

*State Dental School of Norway, Oslo, Norway*

#### **Trichinotic encephalitis and periodontal disease**

L. Brenčić. *Zobozdrav.vest.* 12:177-190  
May 1957

The possible relationship between trichinotic encephalitis and periodontal disease, especially periodontosis, was investigated simultaneously at the Dental College of the University of Belgrade and the department of periodontics of the Dental Institute of the University of Ljubljana, in Yugoslavia.

In 1951, Vujić reported that the known symptoms of trichinotic encephalitis were observed in several patients with periodontosis. This group of symptoms, such as general disturbance of the central nervous system, affection of the third pair of the cranial nerves, lethargy, double vision, mental decline, respiratory defect and involun-

tary movements changing into paralysis, degenerative disturbance of the periodontium, progressive deterioration of the connective tissue of the periodontal membrane and resorption of the alveolar bone, is now known as Vujić syndrome.

In 1929, Ornsteen described a diagnostic triad consisting of parkinsonism, trichinotic encephalitis and periodontal disease.

The studies made at both Yugoslavian dental schools led to the conclusion that a definite relation exists between the different types of encephalitis, especially trichinotic encephalitis, and the different types of periodontal disease, especially periodontosis.

For all patients in whom the presence of Vujić syndrome was established, a suitable treatment was introduced to stimulate the frontal lobe of the hypophysis. Vitamin E (alpha-isomer tocopherol) and magnesium fluoride were given in tablet form. In severe instances, methenamine with sodium acid phosphate (0.324 Gm.) in tablets was added.

This treatment proved far more successful than the previously used withdrawal of cerebrospinal fluid by lumbar puncture.

The presence of Vujić syndrome, however, is often difficult to establish in routine dental examination because the boundary between the different types of periodontal disease, especially between profound periodontitis and periodontosis, is not always determinable.

*Lipičeva 1, Ljubljana, Yugoslavia.*

#### **Incidence of clinical manifestations of periodontal disease in light of oral hygiene and calculus formation**

Arne Lovdal, Arnulf Arno and Jens Waerhaug.  
*J.A.D.A.* 56:21-33 Jan. 1958

A random sample of the Norwegian population, consisting of 1,202 male employees of a modern manufacturing company, received dental examinations to determine the number of teeth present; the efficiency of oral hygiene; the incidence and distribution of subgingival calculus, gingivitis and pathologic pockets, and the incidence of tooth mobility. The men ranged in age from 20 to 70 years. They were divided into two groups, con-

sisting of 786 workers and 416 staff members.

The following conclusions were drawn from the data:

1. The over-all dental conditions were conspicuously better among the staff members than among the workers.
2. Loss of teeth takes place more or less continuously during life, but the incidence was higher among the workers than among the staff members.
3. Oral hygiene was poor throughout the series. It was best in the youngest age group and decreased with age; it was poorer among the workers than among the staff members. Usually, only buccal surfaces were kept clean.
4. Deposition of subgingival calculus was common in the youngest age group and increased with age. It is observed most frequently on the interproximal surfaces, next in frequency on the lingual surfaces, and least often on the buccal surfaces.
5. The distribution pattern of gingivitis was similar to that of subgingival calculus.
6. Pathologically deepened pockets rarely occurred before the age of 25 years. The incidence increased with age, but seemed to reach a peak in the 45-to-55-year age group or even earlier. During this age span, loss of teeth apparently causes a reduction of the pocket depths of the remaining teeth. Pathologically deepened pockets are located most frequently on the interproximal surfaces and least often on the buccal surfaces.
7. A correlation exists between the efficiency of oral hygiene and the incidence and distribution of subgingival calculus, gingivitis and pathologically deepened pockets.
8. Increased tooth mobility does not become an important problem until the age of 35 years, but, from then on, it increases steadily.
9. The fact that the main clinical manifestations of periodontal disease, gingivitis and pathologic pockets are observed most frequently on the interproximal and lingual surfaces implies that efforts at the prevention and treatment of periodontal disease should be directed toward these surfaces.

*Norwegian Institute of Dental Research, Oslo,  
Norway*

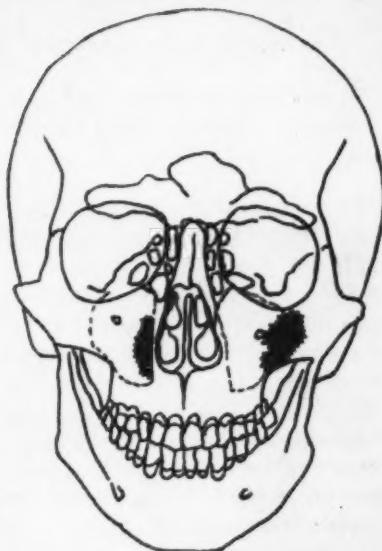


Figure 1. Sites of malignant tumors in maxillofacial region in which combined treatment with radioactive cobalt beads and prosthetic appliances is indicated

**Prosthetic procedures  
during radium beam therapy  
of malignant tumors in maxillofacial region**

Ernst Menke. *Fortschr.Kief.Ges.Chir.* 3:97-101, 1957

Irradiation, especially interstitial irradiation in which radioactive particles (radium or radon) are inserted into oral tissues, is the only accepted method besides radical surgery for treatment of malignant tumors in the maxillofacial region. The x-ray apparatus and radium or radon emit rays which are highly destructive to certain tumor cells, whereas other cells may remain resistant to irradiation.

Malignant tumors, therefore, can be classified as radiosensitive or radioresistant. The less differentiated the tumor cells, the more radiosensitive is the neoplastic growth. The more differentiated the tumor cells, the less radiosensitive is the neoplastic growth. This is the main determining factor for indication or contraindication of irradiation.

The process by which radioactive rays destroy tumor cells is not entirely determined. It has been suggested that actively dividing tumor cells are more radiosensitive than resting cells. It is also possible that radioactivity affects the cell division in various ways. The tumor cells may cease dividing for a certain time and continue division after recovery or they may discontinue division and gradually die.

The objective of radiation therapy is to administer sufficient rays to stop division of tumor cells without severe damage to healthy tissue. Cells are highly sensitive to radioactivity during their mitotic phase. Because not all cells are undergoing mitoses at the same time, several series of comparatively small doses of rays are required. This procedure destroys all cancerous or precancerous cells which are mitotically active at different times.

At the dental clinic of the Municipal Hospital in Bremen, Germany, irradiation with radioactive cobalt beads is used mainly in the treatment of malignant tumors in the maxillofacial region. These strings of cobalt beads are implanted below the site of the tumor and are connected with already inserted or especially constructed dentures.

Once the pathologist has diagnosed malignancy, the radioactive cobalt treatment is given by a group of specialists in which a dentist has a major function.

The prosthetic appliances used are described in a series of illustrations.

The reactions to the inserted radioactive isotopes (cobalt<sup>60</sup>) are varied. During the period of actual irradiation the patient is not aware of any sensation in the maxillofacial region. Two or three weeks after conclusion of the treatment, there may be redness, soreness and swelling of the skin and mucous membrane and a decrease in salivation. These symptoms, however, usually subside within a few weeks. If the patient has received several continuous treatments, depending on the total dose applied, the skin and the oral mucosa

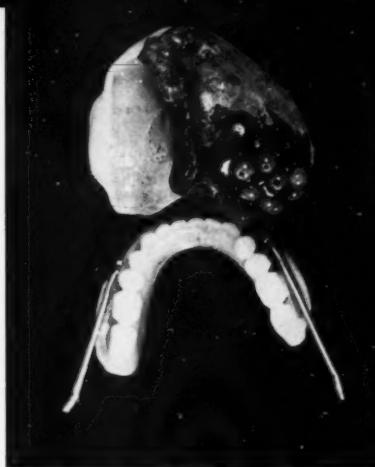


Figure 2 Temporary upper denture to which radioactive cobalt beads are attached



Figure 3 Upper denture inserted after resection of the upper jaw. Radioactive cobalt beads in position

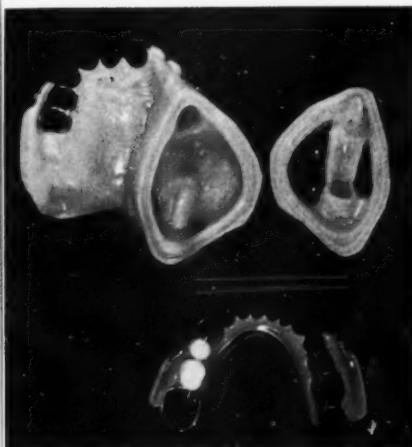


Figure 4 Parts of sectional upper denture, especially constructed for radium beam therapy

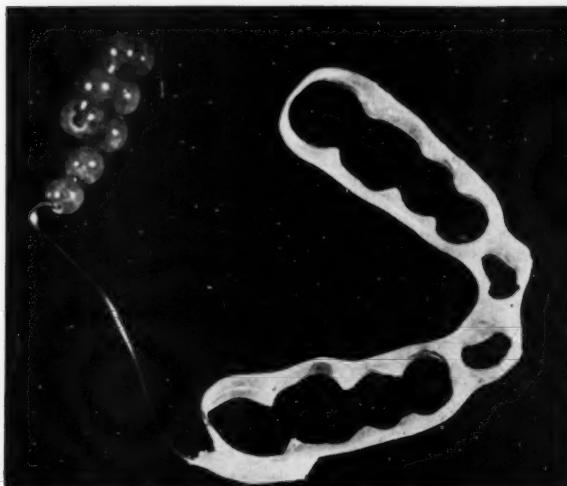


Figure 6 Acrylic splint to which radioactive cobalt beads are attached. Used for fixation during irradiation of epipharyngeal carcinoma

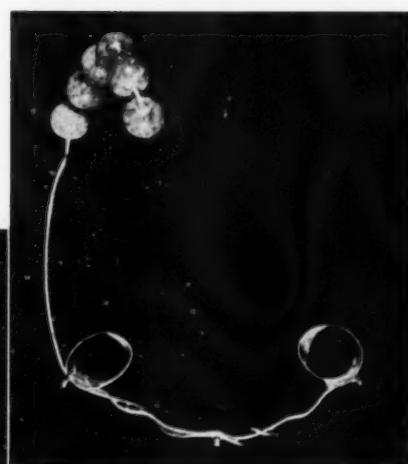


Figure 5 Especially constructed splint to which radioactive cobalt beads are attached. Used for irradiation of recurring tonsillar carcinoma

may become blistered, edematous and extremely sensitive to pain. These reactions are to be expected and eventually they will subside.

*Kieferklinik der Städtischen Krankenanstalten, Bremen, Germany*

**Lethal syndromes and effects of total and subtotal irradiations in rats**

J. Maisin, P. Maldague, A. Dunjic and H. Maisin. *J. belge radiol.* 40:346-398 Sept.-Dec. 1957

The causes of death in experimental rats which had been exposed to total or subtotal irradiation were studied at the research laboratory of the Institute of Radiology of the Catholic University of Louvain, Belgium.

Fatal syndromes occurring within 70 days after irradiation are medullar, intestinal, oropharyngeal, esophageal or pulmonary. A shortening in the lifetime also was found in rats that survived 30 days after irradiation. Even a local irradiation of the head, mouth, thorax or abdomen shortened life. Lethal syndromes after total body irradiation seem to be due to the accumulation of damages inflicted on single organs. There exists a definite threshold dose of irradiation for each specific organ.

Most of the neoplasms occurring in nonirradiated (control) animals were leukosarcomas, whereas the irradiated (experimental) rats exhibited carcinomas of various types. The number of tumors occurring in irradiated rats was double that in nonirradiated animals. Abnormal new growths, however, did not develop in the parts of the body which were protected adequately by lead shields during irradiation. A lead shield was the only protective procedure which improved the survival rate in rats that remained alive for more than 30 days after irradiation.

This study included the evaluation of statistical data of late results of irradiation in a generation of rats which had been exposed to roentgen rays but were protected by cysteine injection into pregnant rats. The fate of embryonal fragment grafts and their possible influence on the survival

rate as well as the incidence of neoplasms in irradiated animals also were studied at the university.

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**A device for roentgenographic localization of tooth remnants in edentulous jaws**

Morris Ohm. *Röntgenbl.* 68:582-583 Oct. 1957

Tooth fragments or broken-off roots which show no clinical indication of their presence, are often buried in edentulous jaws. Because tooth remnants may be associated with infection they should be eliminated. The appearance of tooth fragments retained in the alveolar process does not vary from that of the whole tooth but, because they may be small in size, the roentgenographic localization is difficult.

At the Royal Hospital of Newcastle, New South Wales, Australia, an inexpensive and uncomplicated device is used which facilitates the localization of tooth remnants in edentulous regions of the alveolar process.

This device consists of a lead ruler—constructed from the cover of a commercial occlusal roentgen film packet—which has a serrated edge with the notches at 0.5 cm. intervals and with holes 2.5 cm. from both ends.

The ruler is attached to the roentgen tube side of the dental film with cellulose adhesive tape (Scotch tape). The roentgen-ray exposure is made in the customary manner, with either end of the lead ruler aligned with the center point of the alveolus.

The processed films will show clearly the position of each tooth remnant and also the image of the ruler, indicating accurately the distance of the fragment from the center line of the alveolar margin.

A cross-section roentgenogram is sometimes useful in locating tooth remnants in the mandible prior to surgical removal.

*Royal Newcastle Hospital, Newcastle, N.S.W., Australia*

## Public health dentistry

**Specially designed tooth models for the instruction of patients: guide to early dental treatment**

H. Keller. *Zahnärztl. Mitt.* 45:593-595  
Sept. 15, 1957

The following method has proved successful in demonstrating to patients the three stages of progress of dental caries, especially in molars, and the importance of early dental examination and treatment.

A plastic model of three molars, five times their natural size, is used to designate the small lesions

With the aid of the models, the dentist explains that caries, after invading the hard enamel surface progresses rapidly into the soft dentin. If the caries is not diagnosed at an early stage and treated immediately, pain sets in; frequently it is then too late for conservative treatment. Infection causes an abscess to form at the apex of the tooth, and frequently the tooth has to be extracted to avoid complications.

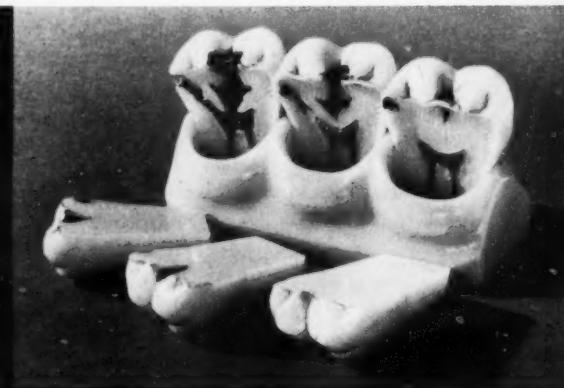
Study of these tooth models usually impresses the patients, children and adults alike, and this influences the patients to have their teeth examined and cared for regularly.

After demonstration of the progress of caries on the model—which takes about 90 seconds—the patients are requested to study again the model and read the explanatory text handed to them. They realize quickly the danger of an unchecked, sometimes painless, progress of caries and the importance of early dental treatment. They often pass on this newly obtained knowledge to acquaintances.

*Sophienstrasse 2, Munich 2, Germany*



External tooth model



Internal tooth model

in fissures and the spreading of caries from a small and apparently harmless lesion to a serious large defect.

The initial lesions look comparatively insignificant on the surface of the model. On the cross section, however, the caries is shown to have penetrated deep into the tooth structure.

**Use of a**

**sodium dehydroacetate-sodium oxalate dentifrice in the control of dental caries**

G. F. Sulser, R. R. Fosket and L. S. Fosdick.  
*J.A.D.A.* 56:368-375 March 1958

If the decalcification of the tooth during the carious process is due to the acids formed by an enzymic degradation of carbohydrate from ingested food, then it should be possible to prevent dental caries by preventing acid formation on the tooth surface. This paper is concerned with the effect on dental caries of the use in a dentifrice of a combination of sodium dehydroacetate and sodium oxalate.

The experiment was designed so that the results from morning and night use of the test dentifrice could be compared with those (1) from the morning and night use of a placebo dentifrice, (2) from the habitual procedures of a similar group of persons using the dentifrice of their choice, and (3) from after-meal use of the test dentifrice. Young adults were used as subjects.

At the end of a two-year clinical experiment, the statistically significant results indicate that the test subjects had an annual increment of new carious lesions that was about one half that of the control subjects.

25 East Washington Street, Chicago, Ill.

**Research in toothbrush design**

Benedict B. Kimmelman. *Pennsylvania D.J.*  
25:24-29 April 1958

A study was undertaken to determine the most effective design of a toothbrush with synthetic bristles for routine adult use. The criteria by which toothbrushes may be judged are effectiveness and safety in cleaning smooth and occlusal tooth surfaces and compressing the gingivae with normal techniques and under normal conditions of use.

With the aid of an engineer and a laboratory technician, machines and testing techniques were devised to test toothbrush performance. A subordinate clinical study was undertaken to acquire data and general information regarding the magnitude of forces employed in toothbrushing, the

wear patterns of toothbrushes, and the pain and pressure tolerances of the gingivae in 40 selected office patients.

Tests thus far have indicated no great differences among several different brands of brushes of similar design. A multitufted toothbrush with four rows of bristles, the two inner rows composed of filaments 0.012 inch in diameter and the two outer rows composed of filaments 0.009 inches in diameter, responded most favorably to the criteria employed.

1711 Pine Street, Philadelphia 3, Pa.

**Characteristic enamel defects in children of the Island of Ischia, Italy**

Hertha Wagenbichler. *ORCA* 4:108-113, 1957  
[in German]

The Island of Ischia lies in the Tyrrhenian Sea between the Gulf of Gaeta and the Bay of Naples. It belongs to the same volcanic system as the Italian mainland near it. Monte Epomeo, a volcano, (2,588 feet) is the highest point. There are several hot springs (up to 147° F.) which are alkaline and saline.

The population totals 30,000, and the main town, the City of Ischia, has a population of about 3,000. The inhabitants of the island are of mixed racial origin. They are healthy—small, but sturdy.

Because several reports of the specific enamel defects in Ischian children have appeared in the Italian dental literature, the teeth of 400 pupils of public and high schools (ranging in age from 6 to 17 years) were examined.

Enamel defects appeared either in all teeth or in tooth groups, especially incisors. These alterations on enamel surfaces show whitish cheesy spots, stripes or a darker discoloration which sometimes extends over all tooth surfaces. The anterior teeth, especially the upper incisors, usually show a darker pigmentation. The clinical picture resembles that of dental fluorosis. An increased resistance to caries and the absence of hypoplasia were observed. No other abnormalities were detectable.

Because the habits and the nutrition of the inhabitants of the Island of Ischia are not different from those of the Italian mainland—adequate

amounts of meat, fish, milk, vegetables and fruits are consumed—the causative factor obviously cannot be associated with the diet. There are no factories on the island and, therefore, smoke, industrial waste materials, gases or chemicals are not responsible for the enamel defect.

The island, however, does not possess a single natural spring of potable water. There are only thermal springs having a comparatively high radioactivity. The water from these springs as well as rain water is accumulated in cisterns (called "pozzi") and regularly consumed. The fluoride content is slightly below 1.0 ppm. There seems to be a definite relation between the intake of radioactive drinking water and the development of these specific enamel defects. It can be assumed that therapeutic doses may influence the toxic effects of the metabolic assimilation of minerals (ammonium, lithium, sodium, calcium, rubidium and cesium) present in the thermal springs of the Island of Ischia.

*Bad Gastein, Austria*

**Solubility rate  
and natural fluoride content of surface  
and subsurface enamel**

Sally Isaac, Finn Brudevold, Frank A. Smith  
and Dwight E. Gardner. *J.D.Res.* 37:254-263  
April 1958

Surface enamel is more resistant to acid than subsurface enamel, the rate of dissolution of phosphate from the surface being less than that from the subsurface enamel. The reason for this difference between surface and subsurface enamel has not been established. In the present study an attempt was made to correlate the solubility rate and fluoride concentration of successive layers of enamel from areas with different levels of fluoride in the drinking water.

Solubility in buffers of pH 4.0, 4.5 and 5.0, and fluoride concentrations were determined for successive layers of enamel from deciduous teeth, unerupted permanent teeth, and erupted permanent teeth, from persons under 20 years old and from persons over 50 years old. The teeth were obtained from persons who were born and had lived continuously in cities where the water supply contained 0.1, 1.0 and 5.0 ppm fluoride.

The solubility increased from the first (outermost) to the sixth (innermost) layer in all teeth at each pH level, and increased most noticeably from the first to the second layer.

Within each group of teeth the fluoride concentration of successive layers decreased as the solubility of the respective layers increased. Enamels with comparable concentrations of fluoride, however, showed different solubilities.

Mottled enamel, with the highest fluoride concentration, was more resistant to acid than was enamel from the other groups. Deciduous enamel with the lowest fluoride concentration was the least resistant.

The difference in solubility between surface and subsurface layers was not related to the organic content of enamel.

There appeared to be no relation between age and solubility of enamel in acid.

Only small amounts of fluoride were lost from enamel during exposure to acid under the conditions of the experiment.

In addition to fluoride concentration, other factors also must affect the resistance of enamel to the decalcifying action of acids. Consideration must be given to the accumulation of trace elements other than fluoride, and to other changes which may occur in enamel during its pre-eruptive and posteruptive history.

*Eastman Dental Dispensary, University of Rochester, Rochester, N.Y.*

**The relation of fluoride in the drinking water  
to the distribution of fluoride in enamel**

Sally Isaac, Finn Brudevold, Frank A. Smith  
and Dwight E. Gardner. *J.D.Res.* 37:318-325  
April 1958

The effects of varying levels of fluoride in the water supply and of age on the distribution of fluoride in tooth enamel was studied, by using the sampling method of Brudevold and others (1956) and by working with a number of selected enamel samples. Deciduous teeth and unerupted and erupted permanent teeth were collected by 20 exodontists in Buffalo, Chicago, McKinney, Texas, and Post, Texas, where the water supplies contain 0.1, 0.1, 1.0 and 5.0 ppm fluoride, respectively. The erupted permanent teeth were

divided into groups according to age. Samples of six successive layers of enamel from the teeth in each group were obtained. The enamel was ashed and the fluoride content determined. The following conclusions were reached:

1. In all groups, a higher fluoride concentration was found in the enamel surface than in the inner enamel layers.

2. At levels of 0.1 and 1.0 ppm fluoride in the water supply, the fluoride content of the outer as well as of the inner enamel increased with age, whereas at 5.0 ppm fluoride in the water supply, the increase in fluoride content with age was evident only in the inner enamel. This suggests that the fluoride concentration of about 3,000 ppm found in the surface enamel of unerupted teeth from Post, Texas, represents a level of fluoride saturation, so that further uptake of fluoride occurs chiefly in the yet unsaturated inner enamel.

3. An increase in the fluoride content of the water supply results in an increase both in the amount of fluoride deposited in the enamel during tooth formation and in that deposited post-eruptively.

*Eastman Dental Dispensary and University of Rochester, Rochester, N.Y.*

**The Division of Dental Services,  
New South Wales**

W. B. Haymet. *Austral.D.J.* 3:30-33 Feb. 1958

In 1915 in New South Wales the School Dental Service was established as a branch of the School Medical Service of the Education Department. Two traveling school dental clinics—the first in the world—were detailed for country service, and a clinic was established in the metropolitan area. In 1946 all health services were transferred to the Department of Public Health and in 1947 a new division—the Division of Dental Services—was created with its own director and staff. At present the division has 28 dental officers (including the director), 11 dental assistants, seven part-time dental practitioners and one clerical officer. The work of the division falls into two categories: (1) dental service for school children and (2) dental care and attention for the inmates of all government institutions, including 12 mental hospitals, 3 state hospitals and homes, 2 tuberculosis sana-

toriums and 22 establishments of the Child Welfare Department.

The aim of the school dental service is to provide dental treatment for children on school premises, and to train them in the care of teeth and the principles of dental health. Of 30,916 children examined in city and country schools in 1956, only 6.0 per cent had healthy teeth. The school dental clinics treated 19,566 children; 33,016 teeth were extracted, 36,727 permanent restorations were placed, and 50,601 other treatments, including prophylaxis, were provided. As it is impossible to treat every child, at present treatment is confined to children from six to eight years old in the city, and from six to nine years old in the country. Within the age limits, every child in New South Wales is eligible for dental treatment. Twenty-one school dental clinics are maintained, which are too few. Even to cover the selected age groups would require 75 clinics.

The dental service to patients of state institutions is functioning satisfactorily. Every inmate in a state hospital or institution is examined on admission and then at least twice yearly. Dentures are provided when necessary. The dental service in the Child Welfare Department establishments is effective, and the dental condition of the children is now of a high standard. In 1956, dental officers treated 27,037 patients, extracted 45,391 teeth, provided 42,364 restorations and 62,524 other treatments; 738 dentures were supplied, and 86 procedures under general anesthesia were undertaken.

*Department of Public Health, 86 George Street North, Sydney, Australia*

**Effect of sulfuric acid on teeth**

*J.A.M.A.* 166:1803 April 5, 1958

Q.—What is the effect of sulfuric acid gas on tooth enamel, porcelain fillings, and gold inlay. A laboratory technician has been pipetting N/12 solution of sulfuric acid for blood glucose determination. Her dentist has raised the question of enamel decay and porcelain stain due to sulfuric acid.

A.—There is little doubt that continued pipetting of sulfuric acid without proper precautions will eventually cause etching and partial solution

of the enamel. The rate and degree of injury will depend on how much acid comes in contact with the enamel and how long it remains on the enamel surface. Acid etching can be felt by the tongue as a sour taste and a roughening of the enamel surface. Damage to the enamel can be minimized by using a long rubber tube on the end of the pipette and by a thorough mouth rinse with a bicarbonate of soda solution if acid is suspected to have entered the mouth. Synthetic porcelain fillings also are dissolved by acids. The enamel margins around gold inlays may also be attacked by acids, causing them to fall out.

535 North Dearborn Street, Chicago 10, Ill.

#### **Dental survey of an isolated Korean community**

Robert S. Hertz. *J. California D.A. & Nevada D.Soc.* 34:95-99 March-April 1958

In December 1956 a dental survey was conducted in the island of Tokchokto, about 40 miles west of Inchon, Korea. Of the approximately 1,000 inhabitants of the main village of Tokchokto, 182 children and adults were examined. The inhabitants are isolated from the mainland and no dental service is available, although a Korean physician "pulls teeth." The normal diet consists of rice prepared with chopped red peppers and cabbage; fish, and hot water. The rice consists of 76.05 per cent carbohydrate. Candy is eaten only rarely.

The DMF rate among men in the age group from 20 to 40 years was 1.9; in the age group from 40 to 60 years, 4.0. The DMF rate among women in the age group from 20 to 40 years was 3.9; in the age group from 40 to 60 years, 7.4.

The incidence of periodontal disease was reversed between the sexes. Among men in the age group from 20 to 40 years, 15 per cent had periodontal disease; in the age group from 40 to 60 years, 45 per cent. Among women in the age group from 20 to 40 years, 13 per cent had periodontal disease; in the age group from 40 to 60 years, 27 per cent.

A substantial number of third molars were missing among the people examined. A high percentage of men had heavy calculus deposits, whereas most women had moderate calculus. Attrition was severe in all teeth, including deciduous

teeth; the abrasion was thought to be caused by the bran on the rice.

The DMF rate was lower than it would be in a comparable sample among people in the United States. There were no significant soft tissue lesions and no anomalies except for five instances of enamel imperfection in maxillary incisors. Malocclusion was limited to a few individual teeth.

The younger subjects had been taught the importance of toothbrushing.

The island population exists without apparent distress in the absence of dental service.

28th Air Division, Hamilton Air Force Base, Calif.

#### **Dental fluorosis in the Union of Soviet Socialist Republics**

H. H. Schmidt. *Zahnärztl. Praxis* 9:53 March 1, 1958

Mottled and irregular patches of white or brown pigmentation of tooth surfaces, obviously of an endemic nature, are found in many regions of the U.S.S.R., in which the drinking water contains high amounts of natural fluoride.

The drinking water of the Ukrainian S.S.R. has an average content of 5.6 ppm fluoride, that of the Kazakh S.S.R. 7.0 ppm, and that of the Moldavian S.S.R. from 10.0 to 12.0 ppm fluoride.

Investigations of the tooth structures of inhabitants of the fluoride-rich regions in the U.S.S.R. were carried out recently. The enamel of the great majority of teeth examined was severely affected, especially the interprismatic substance of the outer third. The dispersion of fluoride did not greatly influence the fracture pattern of the normal apatite series.

When fluorosed enamel and dentin were etched with hydrochloric acid, they exhibited a finer background than do normal tooth tissues. Without etching, however, the external enamel surfaces of fluorosed teeth showed a tendency to a greater microscopic roughness than the enamel surfaces of healthy teeth.

In more than 30 per cent of the permanent residents of these three Soviet republics, chronic and endemic dental fluorosis was observed; in the majority of instances it was associated with

defects in the dentition and dystrophies of the skeleton.

In the serial examination of children and adolescents from other regions of the U.S.S.R. in which the drinking water contains from 2.5 to 3.0 ppm fluoride, there were no pathologic changes in bone or tooth structures observable. The total amount of fluoride in the skeleton varied from 2,500 to 3,000 mg. per kg.

Preschool and school children from the Moldavian Soviet Socialist Republic were examined separately. The constant consumption of drinking water containing from 10 to 12 ppm fluoride has produced severe disturbances in the calcification process.

Preschool and school children from other regions of the U.S.S.R. in which the drinking water contains from 1.0 to 2.5 ppm fluoride showed neither dental fluorosis nor retardation of growth nor any disturbance of the development of bones and teeth.

*Obere Weinstiege 5, Stuttgart-Degerloch,  
Germany*

**Clinical evaluation of caries-reducing  
effect of a dentifrice  
containing 13 per cent carbamide  
and 3 per cent dibasic ammonium phosphate**

Paul Vogel and Walter Hess. *J.Den.Children*  
24:237-242 Dec. 1957

Previous studies have demonstrated that of the three types of ammoniated dentifrices clinically investigated, only the high-urea formula has shown a consistent result in caries reduction.

A further study was made on 140 sixth grade school children in the city of Zurich. Seventy children were given a commercial tooth paste containing 13 per cent carbamide (synthetic urea) and 3 per cent dibasic ammonium phosphate. The active ingredients in the test dentifrice gave oral levels comparable to those obtained with a 22.5 per cent urea, 5 per cent ammonium phosphate tooth powder. Seventy other children were retained as controls and issued a cosmetic dentifrice. Neither the children, the investigators nor the teachers knew which was the test dentifrice and which the control. All children received clinical oral examinations before the start of the

test, eight months after the start of the program, and six months after that.

Over the test period of 14 months the high-urea dentifrice reduced caries activity about 28 per cent as compared with the control dentifrice, a result in keeping with the findings of other investigators.

Dibasic ammonium phosphate may be a relatively unimportant ingredient of the dentifrice in the mechanism of caries reduction. It would be interesting to observe the clinical activity of a dentifrice formula prepared with a high concentration of urea alone, or possibly with some other adjunctive agent such as a glycolytic enzyme inhibitor, a fluoride, or an agent which physically occludes enamel surfaces.

*Freudenbergstrasse 18, Zurich 7, Switzerland*

**A controlled study of the effect  
of dental health education on the gingival  
structures of school children**

G. J. Parfitt, P. M. C. James and H. Colin Davis.  
*Brit.D.J.* 104:21-24 Jan. 7, 1958

An experimental group of 1,539 children received three months of dental health education. The gingivae were examined clinically. Some 214 children from the experimental group and 205 children from a control group were examined before, immediately after, and four months after the education program. At each examination the children were divided at random between the two examiners.

A method of assessment designed to detect any slight changes in the intensity of inflammation of the gingiva was used, consisting of five degrees of inflammation (with one extra point for extension). Six areas of the mouth were graded—the upper right buccal, upper incisal and upper left buccal, lower right buccal, lower incisal and lower left buccal. A total of 30 points per child is possible with this method ( $6 \times 5 = 30$ ). A change of two grades is required before there is a certainty that an improvement, or the reverse, has taken place. A minimum change of from 7 to 12 points for a whole mouth is necessary if a change in the clinical condition of the gingivae is to be claimed.

**Little improvement in the gingivae of the chil-**

dren in the experimental group was noted. The change which could be attributed to the dental health education was 0.2 to 1.7 points.

It would appear that oral hygiene habits are difficult to alter. Those who brush once a day may be persuaded for a short time to brush twice, but the over-all effectiveness of the cleaning of the mouth may not be altered much. Considerable time and care seem necessary in brushing the teeth before any improvement in the gingival condition takes place. The small amount of improvement in the clinical condition of the gingiva of the children in this survey probably indicates that their fundamental oral hygiene habits were little influenced by the dental health program.

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#### **The effects of mouthwashes**

Frederick W. Kraus. *Bul.Nat.D.A.* 16:70-74  
April 1958

Mouthwashes are as old as civilization; about 5,000 years ago, the Chinese recommended washing the mouth with the urine of a child; this custom prevailed up to Fauchard's time and foreshadowed the modern interest in urea and ammonia.

The most ambitious claim for mouthwashes today is that they exert antiseptic action. The terms "germicide" and "disinfectant," which denote the power to kill bacteria, are used interchangeably with "antiseptic" in the advertisements for some mouthwashes. Such claims are ambiguous and often misleading. Every disinfectant requires a few minutes for its action to develop, but the mouthwash advertisements imply that the mouthwash will be effective in a few seconds.

Not only do mouthwashes fail to live up to the advertised claims, but some may be harmful if used continually. Some medicated mouthwashes are toxic, even in dilution; those which contain

organic mercurials are potential kidney poisons; others containing antibiotics may lead to allergies, to the development of bacterial resistance and to the development of black hairy tongue. All medicated mouthwashes are apt to disturb the healthy balance normally prevailing among the many types of oral microorganisms.

The present state of bacteriologic and pharmacologic knowledge argues against the possibility of antisepsis by mouthwashes. However, a reduction in total numbers of bacteria can be accomplished by rinsing and also by other mechanical means. The use of a toothbrush is more effective than a rinse; a detergent food is still more effective in removing loose bacteria and debris.

The greatest psychological inducement to the use of mouthwashes is the promise that they sweeten breath. To mask the odor of bad breath may be to hide a warning symptom. The quality of the breath can be improved more effectively by mechanical procedures than by cosmetic preparation. The use of a toothbrush lessens mouth odors for at least two hours, whereas the masking aroma of a dentifrice lingers for only a half hour.

Some manufacturers claim their mouthwashes help prevent caries, but no such mouthwash has yet been perfected. Equally false is the claim that a mouthwash is effective in the treatment of gingivitis. Calculus removal has been achieved chemically by a mouthwash containing sodium hexametaphosphate, but there is a good reason why such a mouthwash has not been advertised commercially: it dissolves silicate fillings. Improvement in the condition of the gingivae sometimes is noted after the use of a mouthwash applied by a spray gun, but it is the mechanical effect, not the chemical composition of the mouthwash, which produces the beneficial result.

The American Dental Association's *Accepted Dental Remedies* lists four mouth rinses used for their mechanical rinsing action.

*College of Dentistry, Howard University, Washington, D.C.*



**Radiosurgery of malignant tumors of the upper jaw**

Walter Becker. *Fortschr.Kief.Ges.Chir.*  
2:229-233, 1957

Radiosurgery is the art of separating tissues by the use of radium. This technic was developed to assist in general surgical procedures and provides a better approach to cancerous and precancerous tumors.

In recent years, malignant tumors of the accessory sinuses of the nose and the oral cavity have been observed with increasing frequency. Treatment consists in radical surgery and subsequent irradiation with radioactive cobalt, one supplementary to the other.

Before the method is selected it is necessary to consider that no instance of successful treatment of carcinoma of the upper jaw by irradiation only has been reported in medical or dental literature. It is impossible to control these types of tumors without a surgical opening of the sinuses.

Favorable results have been obtained with the four-field technic and telecurietherapy. At present, however, it is not established whether the rotating irradiation or the betatron treatment will achieve the desired result. In all instances in which the sinuses are not opened surgically, the control of improvement and of possible relapse of the tumors appears to be almost impossible.

The method of choice is radical excision of the primary tumor by preventive and curative dissection.

At the Clinic for Otorhinolaryngology of the University of Mainz, Germany, large-scale tests were made to determine whether radiosurgery can be used successfully in malignant tumors of the upper jaw. Previously it has been established that radical surgery is contraindicated in instances in which the tumors already have reached the

regions of the orbit, the pterygopalatine fossa or the epipharynx.

The spontaneous emission of particles or rays from the atoms of radioactive cobalt ( $Co^{60}$ ) can penetrate the deepest parts of the human skull. The advantage of using the highly homogeneous energy of the radioactive isotopes in the region of tumors of the upper jaw consists mainly in the tested compatibility of the human organism to radiosurgery. The strictest control of alpha, beta and gamma rays is essential, because uncontrolled radioactivity is extremely dangerous for patients and surgeons. It may cause development of additional malignant tumors and cataracts, and also may cause changes in the hematopoietic system and in reproductive cells. It also can destroy the marrow of bones, causing fatal anemia.

Through the recently introduced isotope tracers, radiosurgery has been greatly advanced.

Two or three days after radiosurgery, a specially constructed irradiation body is introduced into the operation cavity. In from two to three applications, a total dose of 6,000 to 8,000 r is given. It is often unnecessary to ligate the external carotid artery or to perform electrocoagulation. The effect of anemia on the ligation of the carotid artery, in addition to the risk of electrocoagulation, may result in an unfavorable biologic complication, especially after postoperative irradiation. Defects of the jaws sometimes caused by radiosurgery can be corrected comparatively easily by prosthetic procedures.

Seventeen patients with malignant tumors of the upper jaw were treated with radiosurgery in 1954. The majority had advanced tumors which, according to the standards of other clinics, could be termed inoperable. Of these 17 patients, 10 are now completely free of tumors and clinically free of metastases. With the necessary preoperative and postoperative care and patient cooperation, the prognosis is surprisingly favorable in the majority of instances.

Radiosurgery presents to dentistry a refined operative technic with which the highest curative and esthetic results can be obtained. The tissues involved heal firmly and without complications, all small vessels are completely sealed, the danger of postoperative infection is lessened, and rapid granulation and epithelialization are achieved.

*Langenbeckstrasse 1, Mainz, Germany*



*Figure 1 Carcinoma of upper jaw. Extraoral resection. Invasion of tumorous cells into pterygopalatine fossa and posterior ethmoid sinus. Tumor remains are present. A plastic moulage is inserted*



*Figure 2 (above) Carcinoma of lower jaw spreading to mucous membrane of cheek. Resection of mandible to point of articulation. A chain of radioactive cobalt beads is inserted below plastic moulage*

*Figure 3 (left) Carcinoma of base of tongue. After uncomplicated preoperative intervention at floor of mouth (Leichner's method), seven radioactive cobalt beads are inserted at site of tumor*

#### **Ludwig's angina: report of a case**

Harris Blake and Fred S. Blake.

*J. New Jersey D. Soc.* 29:30-33 April 1958

A 59 year old man had a hard swelling of the left side of the face extending from the region of the left angle of the mandible to the midline. There was pain on pressure but no pronounced inflammation. The overlying skin was normal in color. The upper chest was slightly inflamed. The floor of the mouth on the left side was inflamed, swollen and tender. Oral hygiene was poor. The mandibular left second and third molars were tender to percussion. The patient had no difficulty with breathing or swallowing. His temperature was 99.2° F.

The patient received 600,000 units of procaine penicillin intramuscularly and was admitted to the hospital with a preliminary diagnosis of acute cellulitis. That afternoon his temperature had risen to 103.6° F. The floor of the mouth had

become severely inflamed and edematous and the tongue was displaced to the roof of the mouth. Trismus was present. The throat was edematous and full of secretions. Externally, the swelling had become widespread; it was hot, tender and extended to the right side of the face and down to the hyoid. The patient complained of difficulty in swallowing. Breathing appeared to be obstructed. Intravenous administration of 1,000 cc. of 5 per cent glucose in distilled water with 500 mg. tetracycline was started. At 6:30 p.m. the temperature had risen to 104.8° F. The patient could swallow and breathe only with extreme difficulty and pain. He appeared to be confused and irrational. Otolaryngological consultation was held to discuss the advisability of a tracheotomy operation. The patient was scheduled for an immediate emergency tracheotomy.

After a low tracheotomy was performed and a tracheotomy tube inserted, under intravenous thiopental sodium and nitrous oxide-oxygen

anesthesia, two incisions, 5 cm. long were made on the right and left sides of the neck under the mandible. The incisions were probed and about 15 cc. of foul, yellow pus was expressed from the left side of the face. Two Penrose drains were inserted and sutured to the adjacent tissue. A gauze bandage was placed over the area and held in place with an Ace bandage.

A culture showed nonhemolytic streptococcus.

The next morning the patient's temperature had dropped to 101.1° F. Intravenous fluids were continued, plus injections of 400,000 units of a penicillin-streptomycin mixture (Dicristicin) three times daily. Hot external wet dressings, and intraoral rinses as tolerated, were prescribed. On the second postoperative day the temperature had dropped to 100.0° F. The patient was comfortable and rational. By the fifth postoperative day the temperature had dropped to normal and the patient could take fluids by mouth. Intravenous fluids were discontinued. The tracheotomy tube and the rubber drains were removed on the seventh postoperative day. The floor of the mouth was almost normal. The external swelling had subsided, trismus was no longer present. Antibiotics were discontinued. The patient was discharged on the ninth postoperative day. One week later the lower left second and third molars were removed in the office. Recovery from that point was uneventful. The patient was placed on a high caloric and high vitamin diet.

There is no doubt that early tracheotomy and drainage were responsible for the subsequent recovery of the patient.

17 Church Street, Paterson, N.J.

#### **Parotidectomy for chronic or recurrent sialadenitis**

Hugh C. Keenan, Oliver H. Beahrs and Kenneth D. Devine. *Surg.Gyn.& Obst.* 106:573-576 May 1958

The fact that no single conservative method in the treatment of chronic or recurrent parotitis has been demonstrated to be superior to the others tends to make all of these approaches suspect.

Patients with chronic or recurrent parotitis vary greatly from the standpoint of frequency, duration and severity of the bouts. Some patients

have a single mild episode, a day or two in duration. Commonly, a patient will have a bout of pain and swelling of the parotid gland that persists for several days or weeks. The symptoms may recur once or twice in the same or opposite gland at intervals of weeks or months, never to return again. Others have frequent or constant severe trouble for a period of years. This can occur whether or not the patient has received any or several of the various treatments ordinarily used. It is in this group of patients that superficial or total conservative (nerve preserving) parotidectomy is indicated.

Five patients with chronic or recurrent parotitis were treated by superficial or total conservative parotidectomy in the past 18 months. All five were sufficiently distressed by their trouble to be exceedingly anxious to be rid of it. One patient had equal involvement of both parotid glands. Three patients had had constant or recurring trouble for a period of nine years or more. One patient had had massage and roentgenotherapy, two patients had received massage and vaccine, and one patient, massage and chloramphenicol. In three patients alpha hemolytic streptococci were cultured from Stensen's duct. In all five patients obstruction was thought to be present; subsequently, in all five patients, histologic examination of the excised gland showed cystic and fibrotic changes from inflammation.

All five patients received excellent results from the surgical treatment and all have remained free of symptoms since the operation.

Criteria for the selection of patients for surgical treatment are not clear-cut. Operation is not recommended for all patients with recurrent parotitis, as many or most will have but one or a few mild episodes, followed by no further trouble. The indications must be based on the clinical picture, namely, the distress caused the patient by the disease, the frequency of attacks, and the duration of the trouble. In the five patients, it was believed that the disease had progressed to the extent that there were irreversible changes in the gland, and that hope for spontaneous or medically induced remission did not exist. The pathologic examinations seem to have confirmed this.

The hazard of injury to the facial nerve no

longer should be a deterrent to the performance of parotidectomy when indicated. If the trunk of the facial nerve is exposed as it enters the substance of the parotid gland, that part of the gland superficial to the nerve can be dissected from the trunk and its branches, with direct visualization and little danger of permanent injury to the nerve. In instances of chronic parotitis, the technical difficulties of exposure of the facial nerve are greater because of the pathologic changes in the gland; nevertheless, parotidectomy can be accomplished without permanent injury to the nerve. Temporary weakness of the facial muscles may be present for a period of a few days to a few weeks, however.

In about 200 parotidectomies performed by Beahrs, fistula formation or other difficulties related to the remaining small portion of parotid gland deep to the nerve have not been encountered. It is believed that after superficial parotidectomy this remaining tissue atrophies.

*Mayo Clinic, Rochester, Minn.*

#### **Treatment of human bites of the lip**

Daniel M. Laskin and William B. Donohue.  
*J. Oral Surg.* 16:236-242 May 1958

A series of 14 bite wounds of the lip, inflicted by other persons on the patients, was treated successfully by early primary closure and antibiotic therapy. Twelve of the bites were inflicted during fights, and two resulted from sexual attacks.

Of the 14 patients, ten had bites of the lower lip, three of the upper lip, and one patient had involvement of both lips. The average time elapsing between the occurrence of the injury and the beginning of surgery was about three and a half hours. Three types of wounds were encountered: (1) a puncture wound or linear tear, (2) the separation of a pedunculated flap of tissue, or (3) the complete avulsion of a portion of lip. The

first two types of wounds were easily managed, since there was no tissue loss. The puncture wound or tear was closed in layers using catgut sutures in the deep tissues and fine silk or nylon sutures for the mucous membrane and skin. Where extensive wounds were encountered, closure was accomplished by converting the lesion into a V-shaped defect. When the wound was located on the vermillion surface of the lip, the V was formed in a vertical direction. When the defect was on the anterior surface of the lip, the V was formed horizontally.

Most of the patients received only penicillin to control the pathogenic organisms implanted in the tissues. None of the wounds showed evidence of postoperative infection. In view of the mixed bacterial population which occurs in human bites, however, antibiotics with a broader spectrum, such as the tetracyclines, would be preferable. Use of tetanus antitoxin or tetanus toxoid is a wise precaution, particularly since many bites produce deep puncture wounds favorable to the growth of anaerobic organisms.

There are several reasons why primary closure of human bites can be performed more successfully on a region of the face, such as the lips, than in many other parts of the body. The abundant blood supply favors rapid wound healing and the prevention of infections. Because of the extensive pathways for collateral circulation, injuries to these tissues are less likely to interfere with this vascular supply and thereby impair healing. The lips, as a boundary of the oral cavity, develop a relative immunity to the endogenous bacteria of the mouth. Since many of the oral inhabitants are common to most individuals, the lips normally are resistant to many of the organisms implanted as the result of a human bite. Similar procedures to those described probably could be utilized for human bites in other parts of the face.

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## History

**Do you remember?**

F. E. R. De Maar. *Nederlands Tandarts*. 12:406  
Nov. 1957

Before the middle of the nineteenth century, dentistry was practically unknown in The Netherlands.

A set of artificial teeth, fastened to a base of hammered tin, is exhibited at the Museum of Dental History in Utrecht. The upper and lower jaws of this "denture" are hinged together and there are bilateral screws which probably had been attached to springs (now missing).

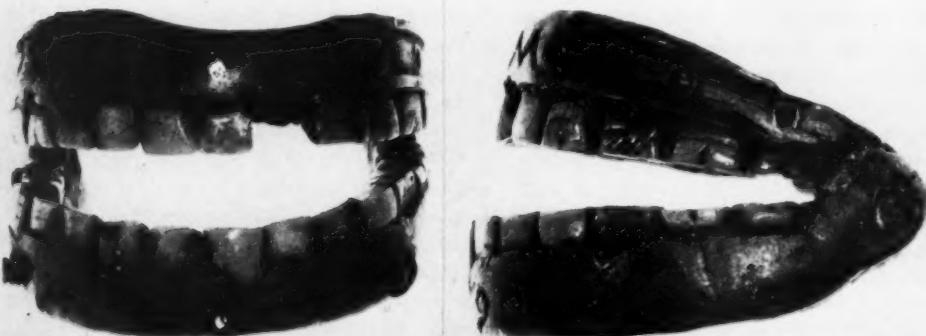
To the tin bases, teeth carved from ivory are fastened with tiny screws, 13 teeth in the upper jaw and 14 in the lower jaw. Although such type of denture must have been regarded with contempt even at the beginning of the nineteenth century, its maker proudly signed the torture instrument by cutting into the upper base his initials "H. M.," and in the lower base the year of construction, "1809."

The ivory teeth are square, slightly rounded on their labial surfaces and flat on their lingual surfaces. The cusps on bicuspids and molars are formed by deeply carved crosses. All the teeth are white, opaque and extremely brittle. The lower right lateral incisor is missing, and only the rusted screw is visible.

An interesting story is connected with this old denture. It was discovered in 1898 by the Dutch dentist, Th. P. van Eupen. He found it in the mouth of an old patient, a farmer from the Dutch village Nieuwe Dijk. This patient, however, was not the first wearer of the denture. He had inherited it from his grandfather who had been a blacksmith, skilled in sculpturing, carving and working with various metals and materials such as ivory and wood. The grandfather had constructed this denture for his own use. He was also known to have made dentures for many of his neighbors.

Van Eupen took the denture to the Dutch East Indies where it was shown at a dental exhibition in Java before World War II. Later it became one of the items in R. Bloemendaal's dental collection.

After the Dutch Navy was scuttled at Java and the island occupied by Japan, Dr. Bloemendaal was kept in a prisoner of war camp for more than three years. He was able, however, to keep some items of his historically valuable collection. After his return to The Netherlands, he presented the collection to the Museum of Dental History in Utrecht.



Complete upper and lower denture, made in 1809. Left: Frontal view. Right: Lateral view

Recent microscopic examinations of the old denture revealed that in the holes drilled into the tin bases some traces remained of a still undetermined soft material which probably had been used as lining.

Prins Hendriklaan 16, Zeist, The Netherlands

**Practice and education of oral surgery  
in the Nile valley: ancient and modern**

Ayoub Amer. *Egyptian D.J.* 3:19-35 Oct. 1957

Caries was found in 15 of 36 Egyptian mummies examined; in nine of the mummies, all the bicuspids and molars were affected, and in two mummies caries was detected in all the maxillary incisors. The diet in the days of the Pharaohs consisted of all the materials of present-day meals.

J. G. Turner examined 104 Egyptian skulls belonging to the period of the twenty-fifth to the thirtieth dynasties. Caries was found in from 38 to 40 per cent; of 435 loose teeth in the 104 skulls, 16.6 per cent were carious.

The author has studied the teeth in skulls found in cemeteries of the working class, in Sakkara. The food of workers contained coarse ingredients which acted as detergent agents; the teeth of workers suffered more from attrition and abrasion than from caries.

Herodotus, the Greek historian who visited Egypt about 500 B.C., stated: "The art of medicine is thus divided among them: each physician applies himself to one disease only, and not more. All places abound in physicians; some physicians are for the eyes, others for the head, others for the teeth, others for the parts about the belly, and others for internal disorders."

The Edwin Smith Surgical Papyrus, compiled by a surgeon of the Old Kingdom (about 1700 B.C. to 1600 B.C.), contains descriptions of 44 types of surgery, of which 27 related to injuries of the head. In the early epoch in Egypt, there was great interest in diseases of the teeth, mouth and associated structures. The Ebers Papyrus contains remedies for toothache, inflammation and bleeding of the gingivae, and for other oral disorders. Also listed is "a remedy to tighten a tooth that is about to fall out."

Among the 27 instances of head injuries mentioned in the Edwin Smith Surgical Papyrus are

several of interest to the oral surgeon, including the following:

Case 15. Perforation of the bone in the region of the maxilla and zygoma.

Case 16. Split of the bone in the region of the maxilla and zygoma.

Case 17. Instructions concerning a smash in the cheek.

Case 20. Fracture of the mandible.

Case 25. Dislocation of the mandible.

Case 26. Wound in the upper lip.

Case 27. Gaping wound in the chin.

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**Vetulonian-Etruscan dentistry**

Luigi Casotti. *Riv.ital. Stomat.* 12:97-112

Jan. 1957

Recent archeological explorations and comparative evaluations of the Etruscan findings have revealed that the Etruscans came to Italy from Asia Minor. The Etruscan era extended from the eighth century B.C. to the first century A.D.

That the Etruscans were Orientals or semi-Orientals can be determined by the characteristics of their earliest art and by many details of their cults and sciences. Etruscan culture resembles that of Mesopotamia, Syria and Egypt and shows hardly any similarity to that of ancient Greece or Rome.

Among the Etruscan cities discovered and explored, Vetulonia was the most important town. It is evident that it was built long before Tarquinii, Volaterra, Clusium or Populonia.

The tombs of Vetulonia yielded a fairly complete picture of the life, culture and civilization of the Etruscans. Many pieces of art, among them skillfully constructed tooth restorations, can be studied at the Archeological Museum of Florence.

It can be assumed that the Etruscan dentists, or better, the jewelers who practiced dentistry, must have known impression materials and techniques to obtain such accuracy in the construction of bridge pivots and crown rings. These craftsmen probably knew how to stabilize loose teeth by constructing small bands of gold to keep them in position. Missing teeth were replaced by inserted human teeth in which the dentin had

been removed, leaving a shell of healthy enamel. It seems that these Etruscan enamel shells were the first jacket crowns. It is possible, however, that these shells were used as models for cast gold crowns. Many gold crowns and bridges and other tooth restorations, some of them emerald green, are exhibited at the Archeological Museum of Florence.

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#### **What do we know about Hippocrates?**

Curt Guttmann. *Deut.Zahnärztebl.* 12:143  
Feb. 22, 1958

The attitude of modern medical historians toward Hippocrates has altered greatly since the beginning of the twentieth century. Serious historians now agree that we know next to nothing of the man, and that few, if any, of the works to which his name is attached, actually were written by him.

Hippocrates, the "Father of Medicine," probably was born on the island of Cos, near the coast of Asia Minor, at about 460 B.C. He was mentioned by Soranus and Plato as a member of the sect, family, guild or society known as the *Asclepiadae* (sons of Asclepius). There is nothing known of the duties, functions or rights of the *Asclepiadae*, although highly conjectural statements crept into works on ancient Greek medicine.

The early Greek historians claimed that Hippocrates descended from Asclepius on his father's side and from Heracles on his mother's side. Because Asclepius is mentioned in Homer's *Iliad*, the first statement appears plausible.

It was also stated that Hippocrates studied medicine in the temple of Asclepius at Cos, and taught and practiced in Thrace, Thessaly, Delos, Larissa and Athens. He died at Larissa at an age given variously as 85 to 110.

Biographies of Hippocrates were written by Soranus of Ephesus about 200 A.D., by Suidas about 1100 A.D. and by Tzetzes about 1200 A.D. None of these biographies contains authoritative material on the man or his work.

The character of Hippocrates and his abilities as a scientist and physician have been held in universal veneration in the centuries which have followed. He is mentioned twice by Plato, and once by Aristotle.

Early in the history of Alexandrian medicine (about 300 B.C.) a group of medical works began to circulate which has become known as the *Hippocratic Collection*. It contained at least 100 manuscripts, and was studied by many ancient scholars, among them Galen. Every treatise requires separate study from the viewpoints of style, authorship, philosophy, language, source, doctrine and interpretation.

The most famous section of the collection is the so-called *Hippocratic Oath*:

"I will look upon him who had taught me the art of healing as I look upon one of my parents. I will share my possessions with him, and I will supply his necessities, if he be in need. I will regard his children as my brethren, and I will teach them the art of healing without fee. I will impart this art by precept, by lecture and by every manner of teaching, not only to my own sons but to the sons of my teacher, and to disciples bound by covenant and oath to the Law of Medicine.

"This regimen I adopt shall be for the benefit of my patients according to my ability and judgment, and not for their hurt or for any wrong. I will give no deadly drug to any, though it be asked of me, nor will I counsel such, and especially I will not aid a woman to procure abortion.

"Whatsoever house I enter, there will I go for the benefit of the sick, refraining from all wrongdoing or corruption, and especially from any act of seduction, of men or women, of slaves or master.

"Whatsoever things I see or hear concerning the life of men, in my attendance of the sick or even apart therefrom, which ought not be known to others, I will keep silence thereon, counting such things as sacred secrets."

Although the basis of ancient Greek medical ethics can be traced to Egypt, no passage in any work reflects better the ethics of medicine and its related sciences.

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### A supportive-type prosthetic speech aid

Paul Gibbons and Harlan Bloomer. *J.Pros.Den.* 8:362-369 March 1958

A prosthetic speech aid, designed for a patient with extensive pharyngeal and total palatal paralysis resulting from bulbospinal poliomyelitis, employs the principle of palatal elevation as a means of decreasing the lumen of the palatopharyngeal valve in speech.

The patient's voice was weak and breathy, with a quality approximating severe cleft palate speech. Speech intelligibility was poor. Oral examination revealed a flaccid, low-draped soft palate incapable of movement during speech or swallowing. No reflex was elicited. Pharyngeal movement was inadequate. The patient experienced some difficulty in swallowing food. The major complaints concerning speech were an objectionable hypernasality and decreased speech intelligibility.

The first speech aid for the patient resembled a fixed bulb-type obturator used for postsurgical cleft palate patients. The patient could not tolerate this prosthesis, and the benefit to speech was negligible.

A second prosthesis (Fig. 1) was constructed. It displaced the soft palate in an upward direction approximating a position which the velum would attain during normal function. The elevated position of the palate was not resisted by any downward pull of the palatoglossus or palatopharyngeus muscles. It was postulated that an elevation of the palate to a position of near closure possibly might permit the restoration of enough function of the palatopharyngeal valve to effect closure. In any event, the lumen would be greatly reduced, although it would permit nasal breathing.

The speech aid was constructed of plastic providing complete coverage of the hard palate. Retention was achieved with four wire retainers on the right and left first bicuspids and the right and left first molars. The soft palate was elevated

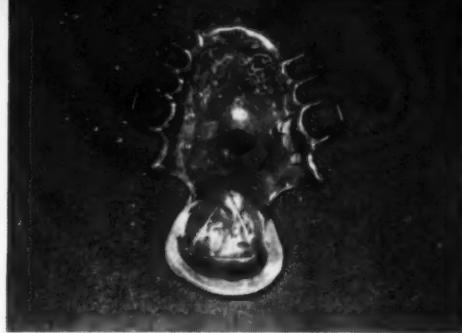


Fig. 1 The second prosthetic speech aid covered the entire hard palate and lifted the soft palate to the approximate height which the velum normally attains during speech

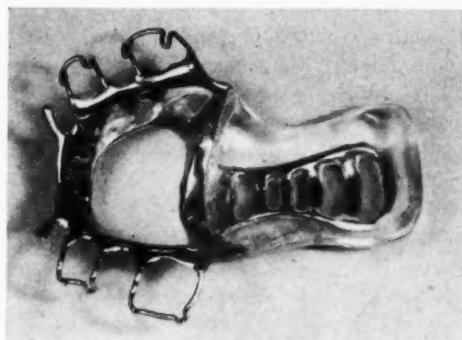


Fig. 2 A more permanent type of prosthesis was constructed. The retentive portion is a cast metal frame with wrought wire retainers. The section supporting the soft palate is of plastic

by means of a broad convex plastic extension from the portion of the appliance covering the hard palate. All surfaces of the soft palate extension were molded to the contours of the soft palate when elevated.

This speech aid was worn with no discomfort for more than one year. The patient did not wear the speech aid while eating, as it made swallowing more difficult. This difficulty was attributed to the fact that the patient had developed a compensating movement of the tongue in swallowing in order to adapt to the pharyngeal and palatal paralysis.

After this trial period, a more permanent type of prosthesis (Fig. 2) was constructed. Muscle function had not returned sufficiently to enable the patient to produce speech approximating normal quality without a speech aid. The retentive portion of the appliance utilized a cast metal

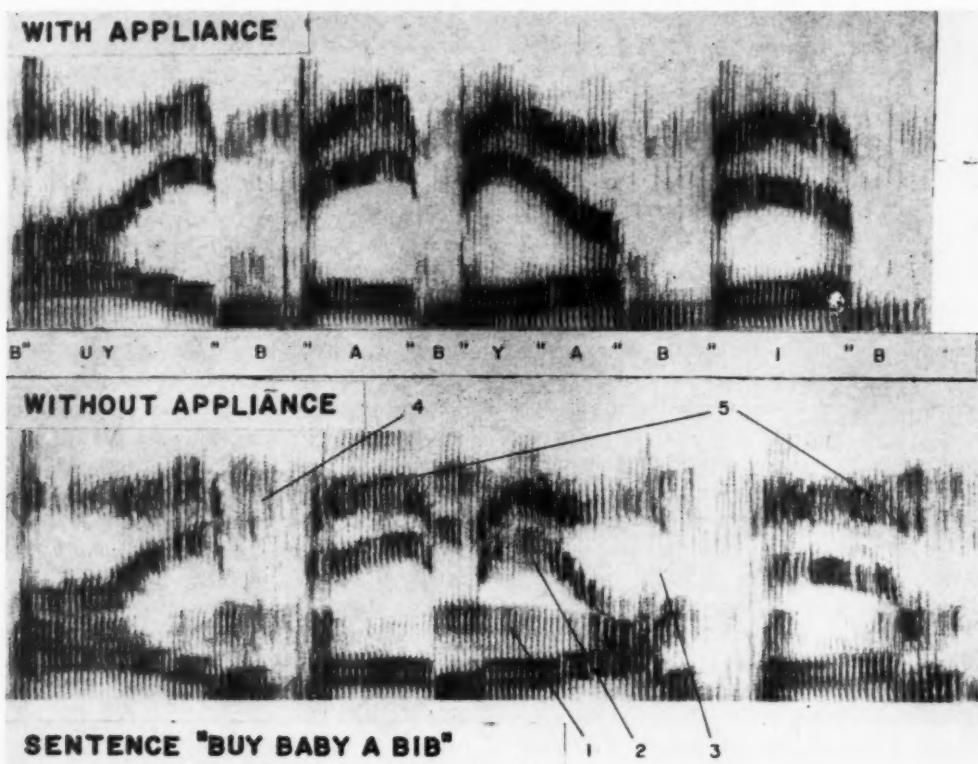
framework with wrought wire retainers on the right and left first bicuspids and the right and left first molars. The portion of the appliance supporting the soft palate was constructed of plastic.

After the speech aid was placed in the patient's mouth, the improvement in speech was instantaneous. Consonants became more distinct. Hypernasality was reduced considerably; the quality of the hypernasality was changed from a "cleft palate" type to one resembling the hypernasality of a "normal" speaker with a slightly relaxed palatopharyngeal valve.

Evidence of the effect of the prosthesis on the patient's speech is shown in the sound spectrograms (Fig. 3). The sentence used is "Buy baby a bib," displaying the consonant sound B in initial, medial and final positions. The acoustic spectrogram provides a visual display of sound patterns in which the horizontal axis represents time (about two seconds in the example illustrated), and the vertical axis represents frequency

range (about 70 to 3,500 cycles per second). Variations in loudness are shown in pattern densities of black and gray over an intensity range of about 12 decibels. The dark portions of the patterns record the more intense sounds; weak intensities are registered in the light gray markings. The vowels and the vowel-like components of

*Fig. 3 Sound spectrograms of the patient's speech. Above: The speech pattern produced with the appliance in place is similar to that of a normal speaker. Below: The speech pattern produced without the supportive appliance shows the characteristics displayed in severely hypernasal speech. The factors which typically identify hypernasality are indicated in the lower spectrogram by number as follows: (1) additional formants where they do not ordinarily occur in non-nasal utterances; (2) alteration in width and intensity of the primary formants which characterize vowels; (3) loss or deterioration of sharply defined consonant boundaries; (4) additional vertical striations (random noise) indicating frictional emission of air through the nasal passages, and (5) atypical resonance bar movements*



the speech are displayed by the wide, dark formant bands which indicate areas of reinforced vocal resonance about 300 cycles wide. Consonants generally are represented in the vertical striations.

In general, these spectrograms show distinguishable differences between the examples of severely hypernasal and mildly hypernasal speech of this patient. The effectiveness of the speech aid is shown by the fact that the acoustic spectrogram made when the appliance was in place closely resembles that of a normal speaker. The pattern made without the appliance shows characteristics found in severely hypernasal speech.

The patient now is enrolled as a college student and takes a normal part in college life. Speech is adequate for average social communication, although a mild hypernasality persists in connected discourse.

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#### **Early pulp changes in the teeth of a dog following full crown preparations**

Samuel Seltzer. *J.D.Res.* 37:220-228 April 1958

An investigation was undertaken to: (1) study the effects of crown preparation with rotary tools run at comparatively low speeds on the pulps of the teeth of a dog; (2) discover if there were differences in pulp reaction with and without water cooling of the teeth at the time of their preparation, and (3) determine the effects of several different kinds of pressures on the dental pulp.

Ten teeth of one dog were subjected to full crown preparations similar to those made for human teeth, by means of rotary tools revolving at about 3,500 rpm. For two teeth, nothing further

was done. Impressions were taken of two teeth with copper bands containing Plasticine, employing light pressure. In two teeth, Plasticine impressions were taken employing maximum digital pressure. Two teeth were subjected to light pressure with modeling compound heated to 40° to 45° C., and two teeth were subjected to maximal pressure with modeling compound heated to 40° to 45° C. One tooth of each pair was prepared under a stream of tepid water, the other tooth being prepared without water cooling. The animal was sacrificed two and a half hours after the beginning of the experiment and a half hour after the last tooth had been prepared.

Studies of horizontal sections of the teeth revealed that crown preparations were responsible for the significant changes. When added pressure was applied to the dentin by means of Plasticine impressions, the odontoblasts were sucked or pumped into the dentin in some regions.

The addition of heat, by means of the modeling compound impression, caused an increase in capillary permeability, as indicated by the presence of large quantities of plasma within the pulp tissue. A larger number of neutrophilic leukocytes were marginated along the blood vessel walls. These leukocytes were especially noticeable in the capillaries between the odontoblasts.

No distinct differences in pulp reaction were noted between those teeth prepared under a water stream and those prepared without water cooling; the variability of time between preparation of the teeth and death of the dog could account for this lack of difference.

The damage produced by full crown preparation is proportionately greater than that produced by cavity preparation because of the greater number of dentinal tubules exposed.

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## Physiology

**Relations between prenatal factors and congenital deformities**

Lyon P. Strean. *Ärztl. Wschr.* 13:110-113  
Jan. 31, 1958

Since congenital deformities constitute a major public health problem, attention should be focused on their specific etiologic factors.

Until recently, it was believed that all congenital defects were the result of genic expressions. Because of better understanding of the factors which may influence the intra-uterine environment during pregnancy, this belief is now challenged by many researchers. In fact, sufficient evidence is available to suggest that heredity may not be the dominant factor and that physiologic, traumatic or emotional stresses in the first trimester of pregnancy may be more significant.

Human genes are complex protein molecules with a chemical structure that may be affected by prenatal environmental factors. The genic potentialities are inherent in the 24 chromosomes transmitted from the mother and an equal number from the father. Monague (1945), Spuhler (1948) and Evans (1949) have estimated the number of genes in man to approximate 30,000. Muller (1947) has attributed organic catalytic activity to these genes by accelerating biochemical reactions. Dahlberg (1948) reported that random variations in cell structure may influence a gene. It seems certain that a large variety of deformities results from a variation in time and in intensity of the exerted unfavorable environmental influences. Decreased resistance to prenatal influences renders an individual more susceptible to malformations.

Warkany (1947) established that the nutritional condition of the mother in the early stages of fetal growth has an important bearing on the development of oral malformations. Emotional stress may interfere with the diet and nutritional

balance of the mother and also may have disturbed the relation between vitamins and hormones in pregnant women (Sieve, 1949). Mason and Brady (1956) established that plasma 17-hydroxycorticosteroid changes are associated with emotional stress and behavior. Strean and Pear (1956) reported that severe emotional stress during the first trimester of pregnancy can produce cleft palate and other oral deformities in the offspring. Administration of cortisone to experimental animals in the initial period of gestation can produce similar abnormalities. Olson (1952) stated that avitaminosis may act as a stresser agent, producing adrenal hypertrophy and increased secretion of hydrocortisone.

It can be assumed that the catabolic effect of hormones and the inadequacy of essential nutrients can interfere with the protein synthesis, thereby causing defects in oral tissue during the formative stage of development. Hyperemesis may be a cause of avitaminosis and may interfere with the normal development of oral tissue.

Administration of drugs to women in the first trimester of pregnancy should be given careful consideration because of possible undesirable effects on the fetus. Antibiotics may produce allergic reactions and change the oral and intestinal flora by eliminating microorganisms essential to vitamin synthesis. Tranquilizing agents may produce deranged physiologic processes. Cortisone and its derivatives are catabolic substances which interfere with the protein synthesis and tissue development. Insulin, quinine, barbiturates and a variety of other drugs may be toxic to the developing fetus.

Bacterial or virus infections contracted during the first trimester of pregnancy may produce serious damage to the fetus.

Oral deformities have been produced experimentally in animals by exposing pregnant females to roentgen radiation (Russell, 1950), or to reduced atmospheric pressure (Ingalls, 1950). Trypan blue injections had similar effects in rats (Gillman, 1948) and in mice (Hamburg, 1952). Nitrogen mustard produced various skeletal defects in embryos of rats (Haskin, 1948).

Although further studies are necessary before definite conclusions can be reached, recent research permits the following deductions:

1. Many oral and other deformities result from

traumatic, physiologic or severe emotional stresses during the first trimester of pregnancy.

2. Heredity may play a role in about 25 per cent of oral and other defects. The influence of genic expression, however, is insignificant.

3. Nutritional deficiency (avitaminosis) is the most important factor in the development of imperfections present at birth.

4. The incidence of oral and other deformities may be decreased by correcting insufficient dietary habits and by inclusion of adequate amounts of vitamin supplements.

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#### **Microscopic investigation of circulation in vital pulps of incisors of rats**

Mauri Pohto and Arje Scheinin.  
*Suomen hammaslääk.toim.* 53:239-248  
Oct.-Dec. 1957

Tracheotomy was performed on experimental rats after an intraperitoneally induced thiopental sodium anesthesia at the Dental Research Institute of the University of Helsinki, Finland.

The ligaments connecting the two halves of the mandible were cut and one half exposed. The alveolar bone covering the incisors was partially removed and the teeth were reduced from both the labial and the lingual side. The preparation of the lingual side was continued to permit investigation of the exposed as well as the unexposed pulp. The circulation in the still vital pulp was observed microscopically through the thin layer of dentin. The capillary action in the pulp was studied through a dentin window which permitted visualization of a comparatively wide region of the exposed pulp.

To prevent drying, the pulps were kept moist with Ringer's solution containing in each 100 cc. from 800 to 900 mg. of sodium chloride, from 25 to 35 mg. of potassium chloride and from 30 to 36 mg. of calcium chloride to which solution 1 per cent of gelatin was added.

Through the dentin window the effects of various experimental manipulations on the flow of blood in the pulp were observed. Retracting stress applied to the incisor examined was found to retard or stop the blood circulation. Electrical stimulation of the cervical sympathetic nerve also slowed or arrested the flow of blood, mainly depending on the duration of the stimulus. Stimulation of the distal branch of the severed inferior alveolar nerve or of the otic ganglion produced no observable effect. The manner by which the sympathetic impulse changes the blood flow to and in the pulp is as yet not determined, because no alteration in the diameter of the arterioles within the pulp has been detected. Venous flow appeared to cease before the arterial flow.

The conclusion was reached that these and other factors are able to produce a specific mechanism for the control of blood circulation in vital teeth.

With the aid of the dentin window, a film entitled "Microcinematography of the Living Dental Pulps" was produced.

*Fabianinkatu 24, Helsinki, Finland*

#### **Studies on the influence of dental treatment on the movement of the uterus**

Tomoko Urushizaki. *Shikwa Gakuho.* 58:9-18  
Feb. 1958

The influence of dental treatment on the movement of the uterus in rabbits was studied by means of the balloon method.

The uterus of the rabbit moves automatically and regularly once each 40 to 60 seconds at rest. The muscles of the uterus contract strongly, especially at dental treatment. The movement of the uterus in the pregnant rabbit is slow, irregular and weak when compared with the uterus movement in the nonpregnant rabbit. But when dental treatment is given, the uterus of the pregnant rabbit contracts more strongly than that of the nonpregnant rabbit.

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Anesthesia  
and analgesia**Comparative studies of tranquilizers  
used in anesthesia**

Erwin Lear, Irving M. Pallin, Albert E. Chiron  
and Lucien Rousseau. *J.A.M.A.* 166:1438-1444  
March 22, 1958

The introduction of the tranquilizing drugs and nonbarbiturate sedatives has provided the anesthesiologist with a series of compounds of significant potential in the field of preanesthetic medication. The purpose of premedication is to bring about a reduction in the following factors: (1) psychic activity and, if present, pain; (2) metabolic activity with a concomitant diminution in oxygen requirement; (3) vagal tone and undesirable cardiopulmonary reflex activity, and (4) secretory activity along the tracheobronchial system, thus aiding ventilation and decreasing the incidence of postoperative complications. Adequate, well-balanced premedication results in a smoother, safer anesthesia for the patient.

The usefulness of three phenothiazine compounds and diphenhydramine in anesthesia for surgery was studied in 1,159 patients. Chlorpromazine was used in 350 instances, mepazine in 434, promethazine in 193 and diphenhydramine in 182. The control group consisted of 262 patients premedicated with either morphine or meperidine with a belladonna derivative, one hour before inhalation anesthesia. A barbiturate was added to the premedication if the use of spinal anesthesia was anticipated. The dose of narcotic received by the control patients was twice that amount received by a patient of similar age and physical status in the tranquilizer study group.

The tranquilizers were given two hours before operation. The size of each study group was determined primarily by the number of patients required to establish a significant trend for the given tranquilizer.

The effective dosage range for chlorpromazine was found to be 12.5 to 50 mg. intramuscularly; for mepazine, 200 to 400 mg. orally; for promethazine, 25 to 50 mg. intramuscularly, and for diphenhydramine, 50 to 100 mg. intramuscularly. These preparations were given two hours preoperatively. Chlorpromazine produced effective sedation in 85 per cent of the patients receiving this tranquilizer; promethazine, in 63 per cent; mepazine, in 62 per cent; diphenhydramine, in 51 per cent, and standard premedication, in 68 per cent.

The selective action of the four drugs tested permits better preoperative sedation (less over-all depression) than is possible with routine doses of narcotics and barbiturates.

The phenothiazine compounds potentiate the actions of agents used in anesthesia, hence reduce the amount of such substances required to induce and maintain anesthesia in patients undergoing surgery. The tranquilizers diminish undesirable reflex activity. Chlorpromazine potentiates succinylcholine. As premedicants, the tranquilizers tested, especially chlorpromazine, reduced the incidence of postoperative nausea and vomiting.

The need for postoperative doses of narcotics usually is reduced and delayed when the tranquilizing drugs are used for premedication. This effect is most pronounced when chlorpromazine is used.

555 Prospect Place, Brooklyn 16, New York

**Premedication with hexobarbital  
in dental local anesthesia**

Sven Huldt. *Acta odont.scandinav.* 15:327-346  
Jan. 1958

An investigation was undertaken to study the influence of premedication with hexobarbital plus acetylsalicylic acid on the efficacy of dental local anesthesia. Sixty instances were studied in 30 students at the Royal School of Dentistry, Stockholm. The local anesthetic consisted of 0.5 per cent lidocaine with epinephrine 25 micrograms per milliliter. The effect was tested with the aid of electrical stimulation by the method of Björn (1946, 1947). The excitation thresholds of the central and lateral incisor and the cuspid were determined. The subject then ingested either ac-

tive tablets or the placebo. After from 30 to 60 minutes the excitation thresholds of the three teeth were again recorded, the injection given and the threshold determinations repeated at intervals of two minutes commencing one minute after completion of the injection. Testing was continued until each of the three teeth once more responded to excitation.

Anesthesia endured 20 minutes in the placebo group, 34 minutes in those premedicated with hexobarbital and acetylsalicylic acid. The difference in duration of anesthesia was significant statistically; differences as to incidence and extent of analgesia were not significant statistically.

Side effects (such as exhilaration, euphoria, fatigue, somnolence, dizziness and unsteady gait) occurred in 26 of the 30 subjects (87 per cent) in the group premedicated with hexobarbital and in 8 of the 30 subjects (27 per cent) in the group receiving placebos.

Premedication by hexobarbital and acetylsalicylic acid induces a potentiation of the local anesthetic effect. The medication, however, is associated with several drawbacks, for which reason it cannot be employed unconditionally with dental outpatients.

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#### Complications of anesthesia involving the inferior alveolar nerve

A. G. Kocsis. *Schweiz. Mschr. Zahnhk.* 68:97-106 Feb. 1958

The cause and effect of complications occurring during and after anesthesia in which the inferior alveolar nerve is involved were studied at the Anatomical Institute and the Dental School of the University of Budapest, Hungary.

The most frequently observed phenomena after anesthesia in the region of this nerve are (1) paresthesia beyond the median line, and (2) temporary blindness.

Paresthesia and occasionally hypesthesia are produced by anastomoses between the normally separated alveolar nerves and vessels. Disturbances of the communication between bilateral inferior alveolar arteries and their vegetative nerve fibers produce and increase the sensation of pain.

Temporary blindness after anesthesia may be caused by spasms of the central artery of the retina produced by the action of the anesthetic on the sympathetic nerve fibers of the carotid sinus; by the anesthetic solution passing from the pterygoid plexus to the sphenotic foramen and from there over the cavernous sinus to the carotid plexus; by an abnormal distribution of the trigeminal nerve or the mandibular artery; by faulty injection techniques, or by hypersensitivity of the vegetative nervous system.

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#### Electroanesthesia of dentin

Kensaku Suzuki. *Deut. zahnärztl. Zschr.* 11:345-355 March 15, 1957

At the Dental Clinic of the Medical and Dental University of Tokyo, electroanesthesia is used to obtain complete loss of pain and temperature sensations in dentin and pulp during cavity preparation.

Electroanesthesia basically is an anodal application of an electric current to the part of the human body to be anesthetized. The positive pole of the direct current is connected to the drilling instrument and the negative pole is placed in the hand of the patient. Premedication is required in isolated instances only.

In 1956, at the clinic 204 cavities were prepared under electroanesthesia in 126 patients, from 7 to 67 years old. Without losing consciousness, the patients experienced no pain and remained in a state of complete relaxation. In more than 90 per cent of patients, painlessness in dentin and pulp was obtained without premedication. Electroanesthesia produced no damage to the pulp.

The advantages of electroanesthesia are as follows: (1) rapid and safe regional (temporary) anesthesia; (2) easy manageability by the dentist; (3) harmlessness to the pulp; (4) avoidance of discoloration of the enamel; (5) prevention of injury to the hard tooth structures and bones; (6) complete relaxation of patients without loss of consciousness, and (7) nonoccurrence of side reactions such as undesirable pharmacologic effects.

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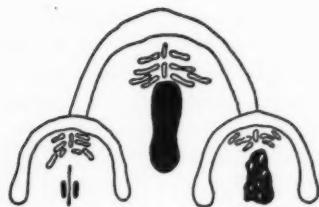


Figure 1 Schematic drawing of elongated torus palatinus observed in Zulia. In center is prototype, at sides the subtypes of elongated tori

**Torus palatinus.  
A frequent clinical observation  
in the State of Zulia**

Mario Luzardo Baptista. *Cien.y Cultura*  
2:145-163 Jan.-March 1957

Of 1,489 patients observed at the Clínica Estomatológica of the University of Zulia, Venezuela, 364 (24.5 per cent) had a torus palatinus. The group included 303 women and 61 men. Elongated and flat tori, their various subtypes and an intermediate type were observed. The length of the elongated tori varied. In some palates, the tori appeared in the form of two small protuberances that had grown on each side of the median line of the palate and were separated from each other by a smooth surface around the median raphe. The intermediate type of torus that was observed corresponded to Thoma's nodular form (Fig. 1). The flat torus was either smooth or lobulated (Fig. 2).

In the State of Zulia, torus palatinus can be regarded as a dominant hereditary characteristic. It is more common in women than in men. It represents a palatal response or adaptation to the functional requirements in people who, because of their diet and their living habits, have a masticatory apparatus that has developed excessively.

The diagnosis of torus palatinus is made from its anatomic character, location and the consistency and color of the protuberance. The characteristic features of torus palatinus differentiate it from other forms of pathologic growths such as odontogenic cysts, specific and nonspecific abscesses, included teeth, fibroma, osteoma, angioma, mixed tumors and sarcoma.

Torus palatinus is rare in infants and children. It requires about 14 years to grow. It is a benign

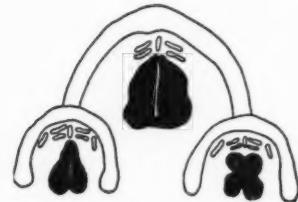


Figure 2 Schematic drawing of flat torus palatinus observed in Zulia. In center is prototype, at sides the subtypes of flat tori

condition which requires no treatment unless it is so large that it interferes with speech and deglutition or with the wearing of a removable prosthesis. In these patients, surgical removal of the tori is indicated. The patient with torus palatinus should be informed of the benign character of the condition, to prevent the development of cancerophobia.

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**Phonetic and speech disorders in patients  
with acquired palatal defects**

M. N. Khamitova. *Stomat., Moscow* 36:4:43-45  
July-Aug. 1957

The speech of 48 patients with palatal defects was studied to determine the degree of phonetic and speech disorders. The defects were the result of trauma, noma, osteomyelitis, and so forth.

Patients with gunshot wounds of the palate experienced the greatest difficulties with speech. Their speech was incomprehensible, unless the patient had gradually adapted himself to the

speaking process while the wound was healing. The degree of inaccurate sound formation depended on the size of the defect.

Case reports illustrate the correlation between size of palatal injury and inability to pronounce various speech sounds and letters. Some patients were producing sounds quite different from the correct sounds, or were adding vowels to consonants. All patients spoke nasally.

Patients with only soft palate defects and small injuries to the hard palate had no pronounced speaking disability. Patients with small defects of the palate connected with the sinus could pronounce sounds normally.

*Research Institute of Orthopedics, Traumatology and Prosthetics, Tashkent, U.S.S.R.*

#### **Detection of human salivary gland virus in the mouth and urine of children**

W. P. Rowe, J. W. Hartley, H. G. Crambrell and F. M. Mastrotta. *Am. J. Hyg.*  
67:57-65 Jan. 1958

Because of the high incidence of human salivary gland virus infection in normal individuals, and the suspected latency or chronicity of the infection, attempts have been made to detect the presence of the virus in the mouth and urine of normal individuals by use of the specific cytopathic changes as an indicator, and to correlate the presence of virus with the presence or absence of complement-fixing antibody, which in children is closely correlated with neutralizing antibody.

A described procedure was used to detect the human salivary gland virus in the mouth and urine. Virus was detected in the mouths of 13 of 21 young children with serum complement-fixing antibody, and in the urine of seven of eight virus-positive children. Some children were positive for periods of at least two to five months, and for as long as 15 to 24 months after the antibody was known to be present.

Human salivary gland virus could not be detected in the mouths of 26 children without complement-fixing antibody, nor from 108 newborn infants or 26 healthy adults.

These findings provide laboratory confirmation of the chronicity and high prevalence of sub-clinical salivary gland infection, and suggest that

persistent urinary tract infection occurs with nearly equal frequency.

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#### **The influence of toxoplasmosis on the incidence of congenital facial malformations. Preliminary report**

Robert Erdélyi. *Plast. & Reconstr. Surg.*  
20:306-310 Oct. 1957

Many investigators believe that congenitally acquired toxoplasmosis may produce congenital malformations, including palatal clefts.

The Sabin-Feldman dye test was performed on 61 mothers who had children with cleft palate and cleft lip. Positive tests were obtained in 6.6 per cent, compared with 3.0 per cent positive tests in a control group of 100 women. When the skin toxoplasmin test was applied to the 61 mothers plus five others (66 in all), positive results were obtained in 44 (66.6 per cent), compared with positive results in 11 per cent of the control group.

On the basis of these results, it is believed that toxoplasmosis may, in some instances, produce cleft anomalies. The embryo may be infected by the diaplacental route with the maternal blood. Toxoplasmosis is only one of the many exogenous causes of cleft palate and cleft lip and is not an essential etiologic factor. With the possibility of curing the disease of toxoplasmosis, the incidence of congenital malformations could be reduced.

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#### **Giant parotid tumour: report of case**

D. W. Short and P. Pullar. *J. Royal Coll. Surg., Edinburgh* 2:240-248 Oct. 1957

Dental or medical interest in mixed tumors of the parotid gland is based mainly on the fact that the etiology is problematical and the progress unpredictable.

In the case reported, the patient, a 51 year old woman, had a parotid tumor approximately the size of a human head. Fourteen years prior to the recent examination, a small tumor at the same site had been excised under local anesthesia. Almost

immediately after surgery, the tumor recurred and grew steadily.

The patient considered herself as incurable and this attitude explained her failure to seek earlier treatment.

Histologic examination revealed a multilocular tumor which was ulcerated on its extreme periphery. The surface was almost completely covered with telangiectatic vessels. Despite the giant size of the tumor, there was, however, only a minor facial involvement observable.

The tumor mass was removed without difficulty and without injury to the facial nerve. An excellent esthetic result was obtained by plastic surgery approximately four weeks after removal of the tumor.

The histopathologic report confirmed the diagnosis of a mixed cell tumor of the parotid gland without definite malignant changes.

A review of the dental and medical literature dealing with giant mixed tumors of the parotid gland shows that, in several instances, such tumors have reached proportions even greater than in the case reported.

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#### **Sickle cell anemia: a molecular disease**

James V. Neel. *Umschau* 58:70 Feb. 1, 1958

Sickle cell anemia occurs almost exclusively in Negroes although occasionally it is observed in Italians and Portuguese.

If a drop of blood is collected from each member of a randomly selected series of American Negroes, it will be found that in about 8 per cent the erythrocytes have assumed a sickle or crescent shape. The ability of these erythrocytes to "sickle" is not always associated with pathologic changes. In a certain proportion of individuals who have the "sickle cell trait," however, a severe, chronic and hemolytic type of anemia can be observed. This disease is known as congenital sickle cell anemia.

The ability of erythrocytes to sickle was observed to have a genetic base, and sickle cell anemia was recognized as a clinical entity of interest to dentists and physicians, especially oral and general surgeons.

Among the symptoms of sickle cell anemia are a thinning out of the cortex in both jaws and a wide trabeculation with greatly increased radiolucence of osseous tissue. The upper jaw usually is enlarged and the maxillary sinuses obliterated.

Taliaferro and Huck established that the ability of the erythrocytes to sickle was due to an isolated dominant gene. In a genetic condition, the heterozygote (genetic carrier) must be differentiated from the normal person as well as from the homozygote (possessor of identical pairs of genes).

It seems possible to predict with a high degree of accuracy which marriage could result in homozygous children afflicted with sickle cell anemia. Since homozygous individuals with this disease usually die young or, if they reach maturity, have a greatly decreased fertility, the vast majority of patients with sickle cell anemia are the issue of marriages between heterozygous persons with the sickle cell trait.

In the absence of such marriages, the frequency of the homozygous type would greatly decrease, and sickle cell anemia would gradually disappear. Rare instances of the disease, however, could occur as a result of mutation in children of a normal parent married to a person who is homozygous or heterozygous.

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#### **Osteoma: report of case**

H. Böhmer. *Zahnärztl. Welt & Reform* 59:164 March 25, 1958

Osteomas may develop on any part of the upper or lower jaw. They arise from preformed bone, periosteum or retained cartilage cells in the embryonic cartilaginous skeleton. Growth is progressive but comparatively slow. Most osteomas are benign. Usually they start spontaneously and are of traumatic rather than inflammatory origin. Growth and development of osteomas frequently cease simultaneously with the termination of the skeletal formation.

A patient having a tumor situated lingual to his lower anterior teeth was referred by his dentist to the clinic of the Dental College of the University of Mainz, Germany, for observation and

eventually for surgical enucleation. The patient complained of a bony growth projecting outward from the surfaces of his lower incisors, and comparatively hard swellings in the mouth and throat. These symptoms disturbed his functions of mastication and speech. Immediate excision of the tumor was indicated, and was performed without biopsy.

The surface of the tumor was lobular, extremely hard and eburnated. Prior to removal, the neoplasm was loosely attached to the soft tissue, and the mucous membrane was not damaged by surgery.

Histologic examination of the specimens from the removed tumor tissue revealed that it consisted of compact osseous tissue containing a specific system of small nutrient canaliculi. The tumor mass measured 6 by 6 cm.

The tumor was diagnosed as an osteoma eburnum involving the alveolar margin which was later ablated.

Since the operation, three years ago, there has been no evidence of recurrence.

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#### Constant salty taste in the mouth

J.A.M.A. 166:1109 March 1, 1958

Q.—The patient, a 62 year old man, complains of a constant salty taste in his mouth, especially at the base of the tongue, that has been perceptible for two years. No trace of the salty taste is present on arising but it becomes manifest after about five minutes and remains throughout the day. Gargling, washing the mouth and brushing the teeth do not improve the condition. The region around the base of the tongue has been cauterized four times, and some lymphoid tissue was removed. After healing, the salty taste returned. The mouth and the throat have normal sensations. What further in the way of diagnosis and treatment can be recommended?

A.—The only organic lesion that could produce constant irritation and a salty taste on the posterior aspect of the tongue would be some type of irritative pathologic or traumatic discontinuity of oral tissue in the region of the glossopharyngeal nerve. A developing neuroma can be suspected. There is no reason, however, why a neuroma or

pseudoneuroma should produce exclusively a salty taste. It might be advisable to have a roentgenographic examination of the base of the brain to ascertain whether an erosion suggestive of a lesion of the nervous system exists. The presence of an organic lesion, however, seems questionable, and the possibility of a psychogenic disturbance as the causative factor of this phenomenon is favored.

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#### A comparison between results of clinical and histopathological diagnoses of diseases of deciduous tooth pulp

Miyo Ishibashi. *Bul. Oral Path.*, Tokyo 1:217-256 July 1957

The accuracy of clinical diagnosis was compared with that of histopathologic diagnosis of pulp diseases in 138 deciduous teeth extracted from 76 boys and 62 girls.

The clinical diagnosis of hyperemia of the pulp in 15 teeth was confirmed histologically in six teeth (40 per cent). The clinical diagnosis of acute simple pulpitis in 29 teeth was confirmed in ten of the teeth (34.4 per cent) by histologic diagnoses. Of the 23 teeth in which acute suppurative pulpitis was diagnosed clinically, 12 were proved the same by histologic diagnosis. Of 28 teeth clinically diagnosed as having chronic ulcerative pulpitis, histologic diagnosis confirmed the diagnosis in 11 (39.1 per cent). The three instances that had been clinically diagnosed as chronic hyperplastic pulpitis were all consistent with histologic diagnosis. Of 40 teeth clinically diagnosed as having pulp gangrene, histologic diagnosis confirmed the diagnosis in 31 (77.5 per cent).

The highest rate of conformity in the results of clinical and histopathologic diagnoses was in chronic hyperplastic pulpitis, followed by pulp gangrene, acute suppurative pulpitis and hyperemia of the pulp. Chronic ulcerative pulpitis and acute simple pulpitis showed the lowest rates of agreement.

Hyperemia of the pulp, acute simple pulpitis and acute suppurative pulpitis generally are judged clinically to be less severe instances of the diseases than histologic diagnosis shows them to

be. On the other hand, instances of pulp gangrene frequently were judged clinically to be more serious or more advanced than histologic diagnosis showed them to be.

There are two main reasons for the lack of conformity between clinical and histopathologic diagnosis: (1) clinical diagnosis is extremely undependable, especially with children, since it depends chiefly on the patient's subjective expression of his pain, and (2) the inflammation of the pulp is by no means simple and stationary, but is accompanied by other disorders and frequently develops into different types of inflammation.

Local spontaneous pain is not necessarily a sure indication of slight changes in the parts of pulp, as is usually believed. Though diffuse spontaneous pain often indicates extensive enlargement of acute inflammation of the whole pulp, this is not always true. The pain felt by patients at thermal stimuli of the pulp does not provide such sure grounds for diagnosis of pulpitis as is usually thought. The value of percussion in diagnosis of pulp diseases has also proved less dependable than hitherto thought. The gangrenous odor provides good grounds for diagnosis of a gangrenous change in the pulp. Present symptomatology must be considered as most undependable as a basis for clinical diagnosis. The tendency to lack of conformity between clinical and histopathologic diagnoses is much greater in instances involving deciduous teeth than in those of permanent teeth.

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#### **The etiology of uveitis: dental infection**

A. Stanworth and H. McIntyre.  
*Brit.J.Ophth.* 41:385-395 Oct. 1957

The possible causative factors of uveitis were investigated in 237 patients. The disease was classified as (1) keratouveitis; (2) anterior uveitis; (3) posterior uveitis, and (4) panuveitis. The anterior uveitis was subdivided into granulomatous and nongranulomatous inflammations of the uvea.

The patients examined were divided into the following two groups: (1) those afflicted with uveitis having a definite association with local or general disease, and (2) those afflicted with uveitis having no such determinable association.

Under this classification, an attempt was made to establish the influence of dental infection, upper respiratory tract infection and systemic disease on the development of uveitis.

An unquestionable relation was found to exist between the occurrence of granulomatous anterior uveitis and periodontal disease, especially in the age group of from 21 to 40 years. A similar relation was observed between granulomatous anterior uveitis and clinical sinus infection especially in patients more than 50 years old, and between granulomatous anterior uveitis and the presence of *Streptococcus pyogenes* in nasal, oral and throat cultures.

Improvement of the ocular disease after treatment of the focal infection in these particular regions provided some confirmatory evidence as to the causative relationship.

In assessment of the role of systemic disease as a causative factor in the development of uveitis, strongly positive Mantoux reactions were associated with nongranulomatous uveitis. The frequent occurrence of uveitis in the presence of ankylosing spondylitis and atypical forms of spondylitis was determined.

Venereal disease, diabetes, sarcoidosis, perarteritis nodosa, toxoplasmosis and brucellosis do not offer sufficient evidence for association with uveitis.

The finding that a strong association exists between dental focal infection and granulomatous anterior uveitis is significant. It should be noted, however, that this observation is contrary to the opinion of many authors, especially American scientists, on the etiology of uveitis.

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#### **Genetics and dentistry**

Carl J. Witkop, Jr. *Eugenics Quart.* 5:15-21  
March 1958

The dentist is concerned with three major problems relating to genetics: (1) the safe use of diagnostic roentgen rays to minimize any germinal or somatic cell damage; (2) inherited factors influencing the normal growth and development of oral structures, and (3) inherited diseases of the teeth and surrounding structures.

In some dental diseases inherited factors can be decisive or they can contribute to the production of a specific illness.

Hereditary oral diseases may be classified as follows: (1) heritable defects in dentition without generalized defects; (2) heritable defects in dentition with generalized defects; (3) heritable defects of oral structures without generalized defects, and (4) heritable defects of oral structures with generalized defects.

There are at least five inherited defects in enamel, as follows: hypoplasia of enamel, hypocalcification of enamel, hypomaturation of enamel, pigmented hypomaturation of enamel, and local hypoplasia of enamel. To determine the prevalence, inheritance and classification of hereditary enamel and dentin defects, 96,471 children in Michigan were surveyed. Inherited enamel defects occurred once in 14,000 to 16,000 children.

Two hereditary defects of dentin—dentin dysplasia and dentinogenesis imperfecta—were found in the survey. Dentinogenesis imperfecta occurs in the general population of Michigan about once in 8,000 individuals. In some isolated populations the incidence is much higher.

Ankyloglossia, or tonguetie, appears to be inherited dominantly. Of 731 persons residing in southern Maryland, 50 had a prominent lingual frenum that prevented them from raising the top of the tongue beyond a point midway between the upper and lower incisors when the mouth was opened to its fullest extent.

One of the most common connective tissue diseases encountered in southern Maryland, among a group selected as a control for inbred population studies, is the Ehlers-Danlos syndrome. This syndrome is of particular interest to dentists because of the frequency with which these patients have postoperative complications of massive edema and swelling.

This isolated population in Prince Georges and Charles Counties, Maryland, is now the subject of extensive social, dental and medical research. The group consists of about 5,000 individuals of mixed racial ancestry who do not consider themselves Negro and are not admitted into the white marriage patterns of the community. Because the in-marriage pattern has persisted in this population since before 1760, many recessive character-

istics appear in the homozygous state. In oral diseases where the genetic factors are only contributory, it may be possible further to define the role heredity plays in their etiology.

*National Institute of Dental Research, Bethesda, Md.*

#### **Statistical analysis of patients with congenital cleft lip and/or palate at the Lancaster Cleft Palate Clinic**

Mohammad Mazaheri. *Plast. & Reconstr. Surg.* 21:193-203 March 1958

The case records of 671 patients at the Lancaster Cleft Palate Clinic were analyzed statistically, with the following results:

1. Cleft lip and cleft palate occur more frequently in males than in females. The male preponderance is most pronounced in the severest and most complicated forms of cleft palate. Type III cleft palate (Veau's system of classification) was found in 203 males and 86 females, and Type IV in 64 males and 40 females. But Type II cleft palate was found in 64 males and 96 females.

2. No significant relation was discovered between differences in age of husband and wife and the frequency of birth of children with cleft lips or cleft palates, as compared with the frequency of birth of normal children.

3. The probability of the birth of a child with cleft lip or cleft palate increases with the increased age of the mother.

4. There is a significant relation between birth rank and the probability of the birth of children with cleft lip or cleft palate. These congenital defects occur more frequently in the later birth ranks and less often in the earliest birth ranks than would occur by chance. The difference between the actual or observed distribution of defective siblings by birth rank, and a purely random order, was statistically significant.

5. The first births of older mothers were defective twice as frequently as were the first born children of young mothers.

6. No comparable relation was found between the age of fathers and the frequency of birth of offspring with cleft lip or cleft palate.

7. Offspring with cleft lip or cleft palate had relatives with cleft lip or cleft palate far more

frequently than held in the general population. The role of heredity is further attested by the far greater frequency with which families with more than one sibling with cleft lip or cleft palate had known defective relatives as compared with families with only one child with cleft lip or cleft palate.

8. There is a strong suggestion that parents are so emotionally disturbed at the birth of a child with cleft lip or cleft palate that often they are either unwilling or unable to engage in further reproduction.

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#### Drug allergy

F. Scheiffarth. *Deut.med.J.* 8:441-444  
Aug. 15, 1957

Drug allergy is an ever-increasing problem in dental and medical practice. It is difficult to estimate what percentage of patients is allergic to certain drugs. According to recent reports in dental and medical literature, the incidence of drug allergy is extremely high.

Willig and Brown reported that, of 140,000 drugs on the market, about 500 are capable of producing allergic reactions in patients. Among these drugs are aspirin, aminophyrine, quinine, morphine, barbiturates, sulfanilamide, dinitrophenol, arsphenamide, phenolphthalein and many antibiotics (especially penicillin).

The initial allergic reaction to drugs is characteristic. Its intensity depends on the dilation in localized blood vessels which causes redness of skin regions; leakage of fluid from blood capillaries causing edema or swellings, and spasms of muscles in bronchi or blood vessels causing asthmatic conditions such as paroxysmal dyspnea, wheezing and coughing.

The susceptibility to drug allergy may be inherited. The allergic reaction to a specific drug, however, is not inherited.

The incidence of drug allergy is steadily increasing as chemical research develops newer and more complicated therapeutic compounds.

The diagnosis of drug allergy is facilitated by skin tests. In several instances, however, positive skin tests reflected more the patient's past history than the present condition. Therefore, the clinical

history of the allergic patient offers the basis for accurate diagnosis and differential diagnosis.

Whenever the specific allergen is identified, the administration of drugs containing the substance which is capable of inducing the specific allergic reaction must be avoided.

In 1945, a series of antihistamines was discovered and developed which counteracts the effect and action of histamines and various drugs. These highly active substances strengthen the human defense mechanism and relieve the symptoms of many diseases, including most of the so-called allergic diseases, as long as they are administered in comparatively high doses.

When continued for too long a time, however, the medication with antihistamines may lead to serious complications. The administration of antihistamines, therefore, does not represent the solution of the problem of drug allergy.

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#### Twitching of the facial musculature

Ivor Scher. *Brit.D.J.* 103:311-313 Nov. 5, 1957

The dentist frequently is the first person to have the opportunity of clinically recognizing lesions. Several types of twitching of the facial musculature may be distinguished, including the following: (1) psychogenic tics; (2) rare idiopathic spasmodic facial spasm; (3) spasmodic contractions of the facial musculature after nerve injury or paralysis, and (4) other spasmodic motor abnormalities involving the facial musculature.

The dentist has a duty to recognize such conditions. His assistance may be sought to ascertain the presence of any possible dental causes and to eliminate them if found. Finally, he may refer patients for treatment by specialists.

Psychogenic tics include any sudden, quick, frequently repeated and purposeless movement. Examples include twisting the mouth, grimacing, and wrinkling the forehead.

Boncour (1910) found 23 per cent of *tiqueurs* among 1,759 children between the ages of 2 and 13. Girls and boys were equally affected. The condition is more frequently seen in children than in adults. O'Conor (1948) reported that 70 per cent of tics occur before the age of ten years.

The cause of the habit may be found in a local

stimulus and may be explicable neurologically and be of organic origin. Colyer and Sprawson (1942) suggest that a dental lesion may induce a tic either directly by reflex irritation or indirectly by lowering the vitality of the patient. Tics also are seen in instances of general psychopathic maladjustment and neurotic difficulty.

A compulsive movement of the head or facial muscles initiates the tic. The variety of movements and their combinations in the same patient may be numerous. The movement is easily controlled at first. Once the movement habit is firmly rooted, the compelling desire to perpetuate it in times of emotional stress becomes a psychomotor haven of refuge.

If eradication of suspected lesions of dental or related tissues fails to resolve the condition, it should be treated psychiatrically. Ten patients with tics were investigated by the author, and suspected dental lesions were removed; all patients required psychiatric treatment.

Rare idiopathic spasmadic facial spasm is a paroxysmal hyperkinesia of the facial muscles, not a motor tic or habit spasm. Although Ehni (1944) and Stones (1954) observed that this condition was found only in middle-aged people, a case is reported involving a 22 year old woman.

Spasmadic contractions after nerve injury or paralysis may occur because of the abnormal joining of the nerve fibers during regeneration.

In the differential diagnosis of other spasmadic motor abnormalities involving the facial musculature, the possibilities of myoclonus, chorea or athetosis should be considered.

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#### The problem of Mikulicz's disease

D. J. du Plessis. *South African M.J.* 32:264-271  
March 8, 1958

In 1888 von Mikulicz described a patient who had enlargement of the salivary and lacrimal glands. The causes of the symptoms von Mikulicz described are as unknown today as they were then. Mikulicz's disease is a rare condition. In a series of over 200 patients with swelling of the

parotid gland, only three had Mikulicz's disease. All were white women, aged 18, 22 and 38, respectively.

The usual history obtained is one of slowly progressive enlargement of the parotid gland for weeks, months or years. One or both glands may be involved, and the whole or only part of the gland may be affected. At the beginning, the swelling has a rubbery consistency but it becomes harder as the disease progresses. The three case reports illustrate these classical points. One patient showed involvement of only a portion of one gland, another had enlargement of one whole gland and the third had diffuse involvement of both glands. Two of the patients, who had been affected for three and five years, respectively, had hard glands that closely simulated neoplasms. Two patients had no pain; the third occasionally had slight pain and three years after the swelling had commenced she developed a dull, gnawing pain with occasional exacerbations at odd intervals even if she was not masticating.

The parotid duct, duct orifice and saliva always are normal in Mikulicz's disease, but late in the disorder the affected gland secretes little saliva. Dry mouth is an indication of Sjögren's syndrome, which should not be confused with Mikulicz's disease.

None of the three patients had enlargement of the lacrimal glands. The involved glands of all three patients were examined histologically. In one patient sections were obtained soon after the onset of the disease, again one year later and again three years later.

The histologic picture of Mikulicz's disease is acinar atrophy, periductal lymphocytic infiltration, duct epithelium proliferation and fibrosis. This is not specific for this condition but is a non-specific response on the part of the parotid gland to any chronic irritation. The diagnosis of Mikulicz's disease can be made only by considering the clinical, sialographic and histologic pictures. Treatment is empirical. There is no mortality associated with the disease, and the prognosis is good. The local mass may disappear with roentgenotherapy; if not, parotidectomy will remove it successfully. Recurrences, however, may be seen.

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**Michael Reese Hospital Medical Center**

*J. Ontario D.A.* 35:28 March 1958

The department of dentistry of Michael Reese Hospital Medical Center, Chicago, has assumed sponsorship of the Histopathology Study Club. The club has an international membership of 110 practicing dentists, teachers and researchers. Objectives of the club are to develop interest in the biologic basis of tissues of the mouth, to increase the dentist's knowledge of the histologic structure of the oral tissues, to improve the dentist's diagnostic ability, and to encourage his awareness of the importance of pathology in diagnostic procedures.

Each member receives monthly specimen sections for microscopic study, as well as Kodachrome slides and a report of the history, clinical and microscopic pictures and diagnosis. Members also have the privilege of sending in biopsy material for examination and diagnosis.

*Michael Reese Hospital, 29th Street and Ellis Avenue, Chicago 16, Ill.*

**American College [of Dentists'] indoctrination—1957**

Jay H. Eshleman. *J. Am. Col. Den.* 24:241-245  
Dec. 1957

The American College of Dentists was formally organized August 20, 1920, in Boston, under the direction of J. V. Conzett, H. E. Friesell and A. D. Black, with the following objectives: to promote the ideals of the dental profession; to advance the standards and efficiency of dentistry; to encourage graduate studies and continuing educational effort by dentists; to encourage, stimulate and promote research; to improve public understanding and appreciation of oral health service; to encourage the development and use

of measures for the prevention and control of oral disorders; to cooperate with other groups for the advancement of professional relationships in the public interest, and to recognize meritorious achievement, especially in dental science, art, education, literature and human relations, by conferring fellowship in the College on those persons selected to receive such honor.

From its beginning, the College has looked with disfavor on ventures in proprietary journalism that might be made by private or commercial interests for the main purpose of profit. Such ventures depend for success mainly on income from uncensored advertisements of dental products, the use of which may not be in the interest of the profession or the public. The College holds that, to insure the scientific quality and professional excellence of dental journalism, it is necessary that dental periodicals be published under the authority and control of recognized dental organizations.

The College holds that accepted standards of quality of dental therapeutic and cosmetic agents are those established by the Council on Dental Therapeutics of the American Dental Association and by the Bureau of Standards of the United States government, nonprofit and scientific agencies whose chief purpose is establishing the true merits of the products.

Fellowship in the College is not doled out on a patronage basis; membership is accomplished by invitation rather than by solicitation or application. Nominations are made on the local level by individuals, and cannot be made by sections of the College. Nominations are made without the knowledge of the nominee and are kept secret by the nominators, the secretary, the board of censors, the board of regents and the local consultants until action is announced formally.

Though hundreds of nominees are screened annually, the percentage of men who qualify is rather small. Nomination blanks may be secured on request from the secretary. The necessary information requested must be obtained without revealing the purpose. The nomination must be signed by two fellows in good standing who reside in the same state as the nominee. On receipt of the completed nomination, the secretary of the College supplies each member of the board of censors with a copy for study and evaluation.

The board of censors does not elect to fellowship, but merely considers qualifications and recommends the qualified persons to the board of regents. The board of regents reviews the recommendation; if it approves, the secretary extends the invitation to fellowship for the board of regents. Local consultants may supply information to the board of censors and board of regents.

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**The Professional Provident Society**

**of South Africa**

**Editorial and annual report**

*J.D.A. South Africa* 13:106-107, 119-120

March 1958

The Professional Provident Society of South Africa, organized 16 years ago by the Dental Association of South Africa, now includes, besides dental surgeons, medical practitioners, attorneys and pharmacists. Other professional groups also are seeking membership. Of the 1,082 members in 1957, 296 were dentists, 603 were physicians, 76 were pharmacists, 53 were advocates, 46 were lawyers and 8 were veterinary surgeons.

Ordinarily, an insurance policy against incapacity is a year-to-year contract and therefore can be terminated at any time by the company. Thus, a single prolonged bout of ill health, especially if of a serious nature, may see the policy-holder deprived of financial assistance from this source in the event of a subsequent misfortune; the cancellation of his policy by one company may discourage other insurance companies from insuring him.

The Professional Provident Society has a different policy. It covers its members for an unlimited number of illnesses up to the age of retirement. Its motto is: Once a member always a member.

Ordinary insurance premiums can absorb a considerable sum over the years and if the policy-holder remains healthy throughout that time the money contributed is all lost. A member of the Professional Provident Society, however, recovers the major part of all premiums paid by

him irrespective of whether he makes no claim or receives numerous benefits during his membership.

The Society is run on the share principle, and the maximum individual holding presently is limited to 50 shares. The average cost per share is about 42 cents monthly, but varies with the age of the applicant. Persons with disabilities are accepted as members under certain conditions. All income from the Society is exempt from taxation.

Sick pay is at the rate of \$1.75 per share per week. A member holding the maximum of 50 shares can claim \$87.50 weekly. This full benefit is payable for the first six months and half the amount for a further six months in any cycle of two years, with special provision for those suffering from a permanent disability.

At the end of each financial year, the Society's excess of income over expenditure is placed to the credit of members' apportionment accounts on a pro rata basis according to the number of shares held; the amount so credited to a member is not affected by any sick pay received by him during the year. The average dividend is about 35 cents monthly for each share held. When a member retires, the amount standing in his account is paid out to him. If present dividend and interest rates are maintained, a member holding 50 shares for 20 years would be entitled to more than \$6,160; the figure after 30 years of membership would exceed \$12,320. Members in temporary financial embarrassment may receive as a loan up to 70 per cent of the amount standing to the credit of their accounts.

In 1957 the number of shares held by the 1,082 members was 45,950.

The Secretary-General of the Dental Association of South Africa administers the Society on behalf of the Association.

The Society contemplates making available additional benefits to its members. It is investigating hospital insurance, group life insurance and a pension program for self-employed persons.

Administrative costs of the Society are 5.5 per cent of income. Sick benefits paid in 1957 were 9.3 per cent of income.

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**Dental rehabilitation of crippled children with the aid of general anesthesia**

Lewis J. Rattner and M. E. Greer. *J.Den.Children* 25:25-30 March 1958

The graduate pedodontic department of the School of Dentistry, University of Kansas City, is associated with the Children's Mercy Hospital of Kansas City. This hospital is primarily a teaching hospital serving the University of Kansas City and the University of Missouri Medical Schools as well as seven hospitals in the metropolitan Kansas City area which are pediatric affiliates. Dental graduate students, with a tenure of 18 months, are appointed to the hospital staff as residents to differentiate them from the rotating intern staff. Selected senior dental students who have shown interest and aptitude in dentistry for children are appointed staff externs. At present, 24 senior students each year are accepted in this phase of the program. These externs provide routine dental care in the hospital dental clinic on both patients and outpatients. The Mercy Hospital is a charitable institution drawing on a patient population from 14 states.

Under the direction of visiting dental staff members and in close cooperation with the medical staff, the dental residents aid the externs with their more difficult problems and work with the exceptional children, including those with cleft palate or cerebral palsy and those who are dis-

turbed or retarded. The dental residents also make ward rounds for dental examination of house patients and attend staff conferences on various aspects of pediatrics. On occasion, dental patients of general interest are presented at staff conferences by the dental resident.

Among the conditions that indicate that dental work should be performed with the aid of a general anesthetic are mental retardation, cerebral palsy (when the patient is otherwise unmanageable), muscular dystrophy, congenital heart defects, paralysis and complete recalcitrance.

After dental diagnosis, if the patient is not already in the hospital the following procedure is practiced:

1. The patient calls for an appointment to the outpatient medical clinic for a thorough physical examination to determine if there are any conditions that would contraindicate a general anesthesia, and to evaluate the child's health and well-being.

2. An appointment then is made for admission on the dental service for the day prior to the performance of the work. This scheduling is checked with the surgical supervisor to insure that an operating room is available.

3. Admission on the day prior to surgery permits the patient to be examined by the pediatric resident on the ward for any recently developed contraindications to general anesthesia. A cold is a common reason for postponement.

4. The hospital laboratory staff performs a routine blood work-up.

5. The dental resident who will perform the indicated operation visits the patient on the day of admission and acquaints himself with the personal, psychological and physical condition of the patient.

Seven case reports illustrate the hospital procedure.

193 Arch Street, Redwood City, Calif.

### Malpractice in dentistry and its legal evaluation

P. Schmuzinger. *Schweiz. Mschr. Zahnhk.*  
67:581-604 July 1957

Court actions for alleged malpractice against dentists have become increasingly frequent. Because the majority of acts charged as malpractice require in their performance the exercise of professional skill and knowledge, the jury cannot arrive at an intelligent decision without the aid of expert testimony.

Although expert testimony is not required in all suits against a dentist in which malpractice is charged, every dental practitioner or specialist may be called on to evaluate the merits of diagnosis and treatment and to determine whether an act of negligence has been committed.

Dentists, like physicians and lawyers, are loath to testify against another member of their profession, especially if the defendant has a high professional standing.

The dentist who has been charged with malpractice has many advantages over the plaintiff. The dentist can be regarded as an expert in his field. The patient usually is a layman. The dentist ought to know what should be done in a specific situation and what was actually done. He also knows the significance of the procedure performed. The patient may or may not know what was actually done. He is hardly able to judge the significance of a dental procedure. He usually judges only by the result obtained without knowing cause and effect.

Malpractice in dentistry, however, is a serious charge. The dentist cannot be regarded as an insurer of dental and general health. He is obliged to perform procedures which are in accordance with the standard of skill, experience and knowledge possessed by other dentists in his community. There must be an adequate latitude for rea-

sonable professional judgment, which includes sufficient room for not too obvious mistakes.

Decisions rendered by the courts in many countries emphasize that mistakes of a practicing dentist consist in disregarding the currently accepted principles of dentistry, with the exception of errors regarded as unavoidable.

In giving his expert opinion in court actions for alleged malpractice, the dentist must be unbiased. He must determine whether actual damage had been caused by incompetence or negligence. For an alleged malpractice not resulting in determinable damage, the dental practitioner cannot be prosecuted.

The expert opinion should be corroborated by the pertinent literature. The testimony must result in the answer to a defined question stated by the court or the lawyers. The expert opinion should aid the judge and the jury in understanding the complications arising in a specific case in order to evaluate properly the evidence presented and to render a just verdict. The expert must have the right to examine the plaintiff and to question the defendant and the witnesses in order to present his professional opinion.

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### Methods for identification of the dead

Cyril Polson, *M. Press* 239:326-329 April 9, 1958

Identification of the dead presents problems which require investigation by a team of experts. Medical and scientific matters are dealt with by a group which includes a pathologist, an anatomoist, forensic scientists and a dentist. Other aspects are the concern of police officers.

The first step is to establish that the remains are human and not animal—usually a simple task. The next step is to determine whether they are those of one or more persons. This requires a careful assembly of the parts. Roentgenography may assist to demonstrate perfection of fit. Duplication of parts normally single is sought for since this obviously points to multiplicity of victims. In that event, each body is scrutinized. Attention is paid to the primary characteristics, namely, sex, age and stature. Identity is thereafter narrowed by references to secondary char-

acteristics, notably the teeth and finger impressions.

The determination of the sex of the victim begins with an examination of the clothing, if any is present, and the general conformation of the body. When the remains are skeletal, sex can be established in upwards of 75 per cent of instances by an examination of the pelvis alone. The female pelvis is roomier, its greater sciatic notch is wider, and there is a well-defined sulcus. Histologic determination of sex, a valuable new mode, derives from the observation by Barr and Bertram (1949) that nerve cells in the female cat have a satellite nucleus at the periphery of the nucleus. This observation now has been widely applied, particularly to sections of human skin which can be sexed with a high degree of accuracy by a search for satellite nucleoli.

The choice of methods to determine age depends on the age group to which the subject belongs. The determination of the age of children and those under the age of 25 depends on an examination of the skeleton and in particular of the long bones, to ascertain how far union of the bones has occurred.

Confirmation is obtained by an examination of the teeth. The times of the eruption of the teeth are an approximate index of age. Age is also

indicated by the size and shape of the lower jaw. That of an infant is small and its shallow body and short ramus lie at an oblique angle. The adult jaw is a solid bone with the body and ramus formed at a right angle. In old age or in edentulous persons, the lower jaw atrophies; the bony plates of the body may become thin and fragile; the angle between the body and the ramus is once more greater than a right angle.

Stature can be ascertained by direct measurement when allowance is made for straightening of the spinal curves after death; this adds about 1.5 in. to the actual stature. It is possible to estimate stature when only one long bone is available, by reference to the tables prepared by Trotter and Gleser.

Either the fingerprints or the teeth can be used to establish identity when known finger impressions or dental records are available for the purpose of comparison. Dentures also are important because they can be recognized with certainty by the dentist who prepared them. Bite marks also are important in identification.

Hairs or fibers also play a part in identification. Scars are an aid to identification but only when they are of an unusual kind or number. A scrutiny of the hands may give a clue to occupation.

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**Copper plating of rubber impressions**Ivor Scher, *Brit.D.J.* 104:263 April 15, 1958

Considerable difficulty is being experienced in copperplating the rubber impression materials. In an attempt to solve the problem, the following tests were performed:

1. A rubber impression was taken, treated routinely with graphite, and inserted in a copper sulfate solution. The copper deposition was porous and honeycombed.
2. The impression was allowed to stand for 48 hours. Again the copper deposition had the same hopeless, honeycombed appearance.
3. The impression was allowed to stand 48 hours as in the first test, but now the granular uneven deposition was picked off with a probe. The impression was returned to the copper sulfate bath and an even, smooth deposition occurred.
4. The rubber impression was stored in a copper sulfate solution for 48 hours. No current was passed. The impression was found to be covered by a light brown scum. This scum was removed gently with an atomized spray of water. The impression was returned to the copper deposition bath, and a fine, smooth, satisfactory deposition was obtained. Inlays produced from the resulting model were found to fit accurately.

The cause of the uneven deposition obtained in the first three tests appears to be a change occurring while the rubber impression material gains stability. Also, it seems that a reaction occurs between the rubber and the copper sulfate solution. The scum mentioned in the last test

appears to be an end product of these reactions. Apparently, no distortion occurs in the impression material during these reactions, as the resulting inlays fit accurately.

7, Sidney Place, Cork, Republic of Ireland

**Effectiveness of water coolants with rotary cutting instruments**F. A. Peyton, *J.A.D.A.* 56:664-675 May 1958

A study was undertaken to evaluate the effectiveness of water applied as a water-air spray mixture and as a stream to small burs and diamond instruments operated at speeds of 30,000 to 170,000 rpm, with a force on the instrument of from 2 to 8 ounces. The effects of changing the volume and temperature of water applied were studied in relation to the temperature rise developed in the tooth during the cutting operation.

Small diamond instruments and carbide burs were effective when operated at 30,000 to 170,000 rpm with only a four ounce force applied during the cutting operation; either the water-air spray or the water stream served as an effective coolant.

Four ounces seems to be an effective applied force when operating at 30,000 rpm or above.

There was little significant difference between using room temperature water or mouth temperature water.

Although a generous volume of water applied to the tooth during the cutting operation reduced the temperature rise in the tooth by as much as 10 or 12° F. below that resulting from use of the water-air spray coolant, the importance of this reduction is not known.

If properly handled, both the water-air spray and the water stream appear to serve as effective coolants with the conventional small instruments currently available, when operated at prevailing maximum speeds of rotation. The choice more likely might be determined on the basis of individual preference, convenience, better vision or other such quality.

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## Endodontics

**Direct approach to pulp chambers and canal orifices**

E. Alan Lieban. *New York J.Den.* 28:139-145 April 1958

In endodontics, failure to open a tooth correctly precludes the possibility of gaining free direct access to the pulp chamber, often resulting in pulp mutilation and inability to locate the canal orifices.

Roentgenograms of the tooth to be operated on should be taken with the cone directed perpendicularly, mesiodistally and distomesially, and films should be studied for any anatomic deviation.

Access to the pulp canal or canals should be obtained in a direct line with the long axis of the tooth. Access to a canal should never be attempted through a proximal, buccal or lingual cavity without first extending it to a location which will permit direct approach.

Generally, anterior teeth are opened lingually and posterior teeth through the occlusal surfaces. Openings should be made slightly funnel-shaped to admit light to the pulp chamber and facilitate access to the canal orifices.

Excessive destruction of tooth structure should be avoided. However, the opening always should extend to the full periphery of the pulp chamber, including the pulp horns, if discoloration is to be avoided. All overhanging ledges and obstructing walls should be removed. After the cavity is opened sufficiently, the pulp chamber roof should be cut away. Burs should not be used on the convex floor of the pulp chamber or in the canals; they may perforate the floor or create ledges in the canals.

The pulp canals of incisors and cuspids join the pulp chamber without any line of demarcation. To gain access to the pulp cavity of an anterior tooth, the approach should be made through the center of the lingual fossa, slightly above the cingulum. The initial opening through the enamel is made with a small round diamond

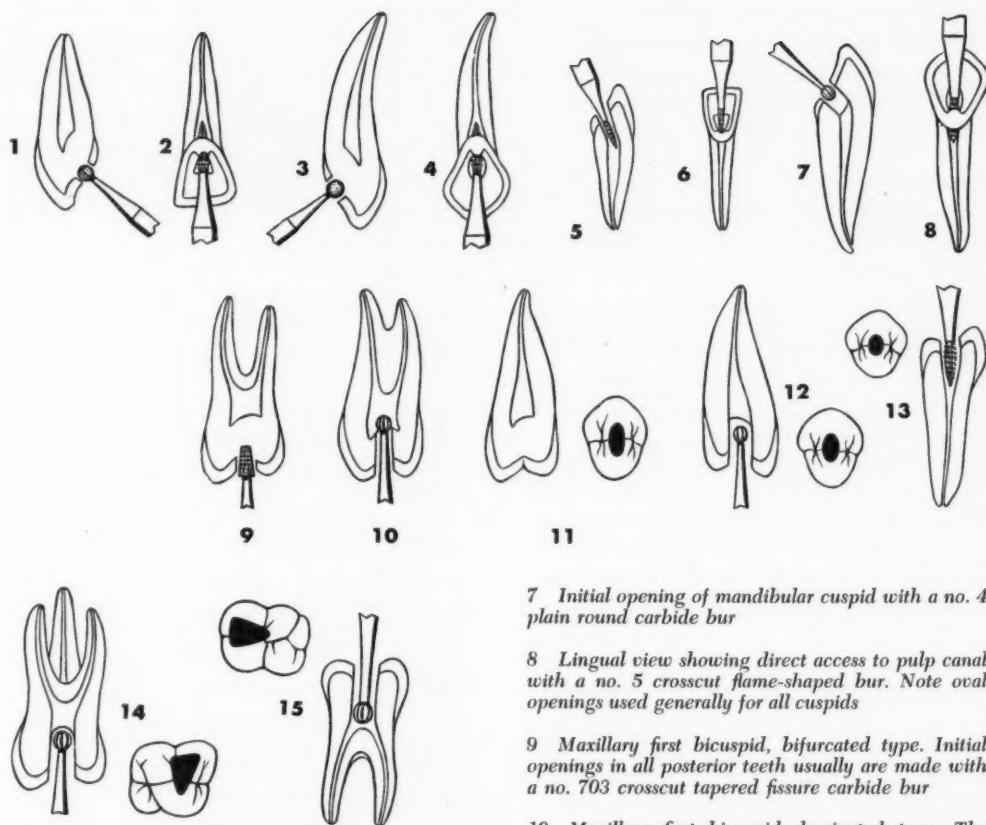
stone or a no. 3 or no. 4 round carbide bur. The stone or bur is directed at about a 60 degree angle with the surface of the tooth until the dentin is penetrated. At this point a no. 3 or no. 4 plain round bur is substituted, if a diamond stone was used for the initial opening. The direction of the bur is changed to follow the long axis of the tooth, until the pulp cavity is reached. The opening then is enlarged and made funnel-shaped with a flame-shaped bur, until the opening includes the complete periphery of the pulp chamber and tapers gradually into the canal. Surface openings in central and lateral incisors are made triangular, with the base toward the incisal edge. Triangular openings are made with a no. 700 crosscut tapered fissure bur.

The maxillary first bicuspid has three types of roots—bifurcated, laminated and single. The maxillary second bicuspid usually has one root and a single canal; occasionally, it may have two roots, or one root and two canals. The mandibular first bicuspid has buccal and lingual horns; occasionally, the canal may divide into buccal and lingual canals. The pulp cavity of the mandibular second bicuspid consists of buccal and lingual pulp horns, pulp chamber and a single pulp canal.

Crosscut carbide tapered fissure burs are used to start the opening of all bicuspids—indeed, of all posterior teeth.

Each of the three roots of the maxillary first molar usually contains one canal. Pulp cavities of the mandibular first and second molars generally are similar. These teeth usually have a distal and a mesial root. The distal root contains one pulp canal whereas the mesial root has two canals, each ending in its foramen.

30 West Fifty-ninth Street, New York, N.Y.



1 Lateral view of maxillary central incisor showing initial opening through the enamel with a no. 4 plain round carbide bur

2 Lingual aspect, subsequent enlargement and direct approach to pulp chamber and canal with no. 5 crosscut flame-shaped bur

3 Lateral view of maxillary cuspid. Initial opening made with no. 4 round diamond stone

4 Lingual view depicting direct approach to pulp chamber and canal with no. 5 crosscut flame-shaped bur

5 Lateral view of mandibular central incisor showing funnel-shaped opening and direction of no. 3 crosscut flame-shaped bur

6 Lingual aspect showing the triangular opening which generally is made for all incisors. A no. 700 crosscut tapered fissure bur is used for this purpose

7 Initial opening of mandibular cuspid with a no. 4 plain round carbide bur

8 Lingual view showing direct access to pulp canal with a no. 5 crosscut flame-shaped bur. Note oval openings used generally for all cuspids

9 Maxillary first bicuspid, bifurcated type. Initial openings in all posterior teeth usually are made with a no. 703 crosscut tapered fissure carbide bur

10 Maxillary first bicuspid, laminated type. The opening through dentin and into pulp chamber is continued with a no. 6 plain round regular or extra-long angle bur

11 Single root type first bicuspid, and occlusal opening

12 Maxillary second bicuspid, depicting occlusal opening

13 Mandibular first bicuspid. The occlusal opening may be continued with a no. 5 crosscut flame-shaped bur directly to the pulp

14 Maxillary first molar. Opening through dentin is continued with a no. 9 plain round regular or extra-long angle bur. Note curvature of floor of pulp chamber

15 Mandibular first molar. Occlusal opening for direct approach to pulp chamber and canal orifices

**Prognosis of traumatically changed  
and loosened permanent teeth in children**

Vibeke Skieller. *Tandlaegebl.* 61:657-673  
Nov. 1957

Follow-up examinations were carried out at the Denmark Dental School in Copenhagen on 60 children previously treated for traumatic changes (dental disharmony) in one or several permanent teeth.

The study comprised three subjects: (1) severe looseness of teeth; (2) dislocation resulting in impaction, and (3) dislocation producing extrusion. Simple tooth mobility did not involve permanent positional changes.

In all three groups, the lower central incisors were involved about three times as often as the lower lateral incisors.

The majority of accidents, causing trauma to the teeth, occurred in the age group between seven and eight and in the age group between 12 and 13 years.

Among the 60 children examined were 37 boys and 23 girls. Diagnosis, prognosis and treatment planning required a thorough examination of the patients, both clinically and roentgenographically. In tooth impaction and extrusion, surgical repositioning of the teeth was the method of choice. Immobilization by means of orthodontic procedures such as fixation or bite raising required a treatment time varying from 4 to 12 weeks according to the severity of the injury.

The prognosis depends on the differentiation between teeth with a completed root development and teeth which are not completely developed. The immediate effect of trauma on the pulp as well as the effect observable over a prolonged period must be considered.

The findings were as follows:

1. Teeth with incomplete root development showed an increase in positive reaction to the electrometric vitality test immediately after the injury.
2. There were several instances of pulp preservation observed.

3. Regeneration of the pulp occurred in instances in which the vitality test revealed a negative reaction immediately after the injury.

Lack of response to the electrometric pulp test, however, does not indicate a sufficient reason for pulp treatment. Such a treatment should not be initiated unless a careful clinical observation reveals pronounced symptoms of traumatic changes in the pulp.

The follow-up examinations revealed that in several instances it took as long as ten months before the pulp was able to recover. Many case reports describe a pulp recovery after one year. In the present investigation, the vitality of the pulp returned—if at all—in the majority of instances within one month after the injury or treatment, irrespective of the stage of the root development.

In instances in which the pulp was initially vital and later became nonvital, this devitalization usually occurred within the first two months. In an isolated instance, however, 13 months elapsed before devitalization.

It can be concluded that immediate pulp treatment is not indicated, especially in instances in which the root development is not completed. An intimate knowledge of the various symptoms of traumatic changes in tooth structure is essential for diagnosis and prognosis.

In children with mature or almost mature tooth roots where the trauma has resulted in severe looseness, dislocation, impaction or extrusion, the prognosis is poor. Discoloration rarely occurs, but the time for pulp treatment must be determined after continued clinical observation. Resorption occurred in all three groups. It appeared most frequently in connection with impaction, next with extrusion, and with uncomplicated looseness only in isolated instances.

Roentgenographic examination revealed that resorption was more severe and advanced more quickly in undeveloped and underdeveloped teeth. The prognosis of arresting posttraumatic resorption is most favorable in teeth with a completed root formation.

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**Six months with antihistamine  
and gingival hyperplasia due to Dilantin**

Glenn N. Brinker. *J. Indiana D.A.* 37:12  
April 1958

At the Fort Wayne State School an attempt was made to confirm the reported successful results obtained by Gaillard (1957) in controlling gingival hyperplasia induced by diphenylhydantoin sodium. Antihistaminic therapy was tried with 18 epileptic patients. The oral conditions were recorded with colored photographs before and during treatment with various antihistamines over periods ranging up to and beyond the suggested two months.

Before antihistaminic therapy was begun, each patient was given a dental prophylaxis and instructions in oral hygiene. Throughout the period of observation, oral hygiene was emphasized and supervised. In no instance, however, did visible improvement occur in the gingival tissues.

The beneficial results reported by Gaillard were not substantiated.

*Fort Wayne State School, Fort Wayne, Ind.*

**Ineffectiveness of antihistamine therapy  
for gingival hyperplasia  
due to diphenylhydantoin sodium**

W. Roy Breg and Joseph P. Falcetti.  
*New England J. Med.* 257:1128 Dec. 5, 1957

Gaillard (1957) reported that when gingival hyperplasia due to diphenylhydantoin sodium was treated in two patients with antihistamine drugs, improvement was noted.

The authors treated seven patients in an institution for retarded and epileptic patients, who had gingival hyperplasia caused by the administration of diphenylhydantoin sodium. The

degree of gingival hyperplasia was mild in one patient, moderate in three and moderately severe in three. All were treated with chlorprophenyridamine maleate in sustained-release capsules. The dose varied from 8 mg. to 12 mg. twice a day for ten weeks.

The results were evaluated by comparing photographs of the gingivae taken before and after the course of antihistamine therapy. The results were uniformly disappointing. No patient showed improvement. Two of the patients, including one who had recently undergone gingivectomy, showed some progression of the hyperplasia.

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**Clinical study of claimed curative effect  
of chlorophyll preparations  
in treatment of oral lesions**

A. Carlassare. *Acta stomat., Padua* 4:307-318  
Oct.-Dec. 1957

A clinical study was undertaken at the Dental School of the University of Padua, Italy, to investigate the curative effect of a chlorophyll preparation used sublingually in the treatment of oral lesions.

It has been claimed by the manufacturer and reported by various authors that this preparation which contains chlorophyll A and B produces unusually prompt therapeutic results in the treatment of traumatic and aphthous lesions of the mucous membrane of the mouth and tongue.

Sixty persons of both sexes, afflicted with these oral lesions, were observed before and after treatment with this chlorophyll preparation. Administration of chlorophyll did not produce improvement or cure.

Although it seems possible that the clinical effectiveness of this chlorophyll preparation cannot be evaluated adequately by tests performed with a comparatively small number of patients, there seems to be no evidence to warrant the recommendation of this or other chlorophyll preparations for the treatment of lesions in the oral cavity.

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**Treatment of tic douloureux  
with stilbamidine isethionate**

Albert A. Antoni and J. H. Johnson. *J. Oral Surg.*  
16:226-230 May 1958

Stilbamidine isethionate, 0.15 Gm., dissolved in 200 cc. of a 5 per cent glucose solution in sterile distilled water was prepared just prior to administration and was given to the patient slowly by controlled intravenous drip. The solution was protected from the light by a brown paper bag. The average period of administration was one hour.

Seven patients with tic douloureux were treated. The first patient received one such injection daily for 14 days; the second for 12 days; the third for ten days; the fourth for eight days; the fifth and sixth patients for five days, and the seventh patient for six days. The drug was administered easily in the dental office. The intravenous drip was started, and the patient relaxed and read a magazine during the administration.

For the first few weeks after the treatment, the patients' symptoms seemed to become more severe. However, the symptoms subsided in all instances; by the fourth or fifth posttreatment month, all seven patients were free from pain. The pain paroxysms were eliminated, and the patients had paresthesia over the entire area of distribution of the trigeminal nerve. There was no muscular dysfunction, and the eyes retained

their normal reflexes and their normal sensations.

A most untoward reaction occurred and proved troublesome in those patients who had received 14, 12 and 10 injections respectively. The reaction took the form of an extreme pruritus over the distribution of the trigeminal nerve including severe itching and irritation of the eyes. For a time this syndrome was almost as distressing to the patient as his original pain. The pruritus was less pronounced and subsided earlier when a small number of injections was used.

Patients have been free of pain for from 4 to 24 months. Pain recurred in one patient, who had received five injections and had been free of pain for nine months. A single supplementary injection was given this patient and this gave complete relief of pain.

Stilbamidine isethionate is very toxic and must be used with caution. Since as little as five injections cause cessation of pain without severe untoward itching, it is possible that this drug may be effective in much smaller dosage than that advocated by the original investigators, and that comfort may be maintained indefinitely by small supplementary injections. Stilbamidine isethionate deserves the broadest possible investigation as an agent for the control of the pain of tic douloureux.

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**A recall technique**

Robert W. Bonds. *D. Health Memorandum* 2-3  
April 15, 1958

A well-managed recall system is the backbone of a dental practice. The Public Health Service dentist, and many of his patients, move to new locations from time to time. Even though the dentist may see the same patient for only a few recall visits, he can help the patient establish the habit of seeking regular dental care. Dentists in the Public Health Service are as concerned with the prevention of diseases as with their treatment. The use of a recall system in Public Health Service dental clinics would be a good example of preventive dentistry in practice.

A recall system requires an appointment book that can be kept dated at least six months ahead of current operations. A loose-leaf book is probably the most suitable; it should contain two markers, one for the current date and the other for a date six months ahead. Each time the current marker is moved ahead, the six-month marker also should be advanced an equal number of days. Proper management of the appointment book is an important factor, and should be the responsibility of one individual in the clinic. An alphabetical card index for all patients also is desirable. The card should list the name, address and telephone number of each patient. The card serves as a quick reference for the receptionist when sending out the recall notice.

When work on a new patient is completed, the dentist explains to him the desirability of regular examinations and prophylaxis. If the patient consents to the recall arrangement, the receptionist is instructed to give him a recall appointment. This entry in the appointment book is written in red. All other appointments are written in black. With this system, the receptionist preparing on

Monday to send out next Monday's recall notices can identify immediately the patients listed for six-month recalls. At the time the recall notice is mailed, a check mark is placed in front of the patient's name; this mark is circled when the patient confirms his appointment. If a patient fails to confirm by the proper time, the receptionist should try to reach him by telephone. If the patient cannot be reached, the dentist is so informed and he decides how the available time is to be used.

The recall appointment card should bear the facility's letterhead and be worded as follows: "This card is to remind you, as you requested, that it has been six months since your last dental examination. A time has been reserved for you at our clinic for (day, date and hour). Would you please call (phone number) by (date) and confirm this reservation?"

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**Appointment book control  
in the advancement of better dentistry**

Robert K. Stinaff. *Fort. Rev. Chicago D. Soc.*  
35:9-12, 26-29 April 15, 1958

Many strains and tensions in the dental office arise from lack of control of appointments.

To institute a program of appointment control, the dentist should first review samples of available appointment books. A recent survey by the Ohio Academy of Dental Practice Administration showed that the profession is rapidly adopting an appointment book which reveals a complete week when fully opened, and which is loose-leaf, showing the day of the week and sometimes the date, and lined for quarter hour units. Most appointment books allow sufficient space for the patient's name and telephone number; a companion column is used to describe the services to be rendered at each appointment. With an appointment book which reveals a complete week at a glance, it is easier to schedule a series of appointments for any patient without unnecessary leafing, and the days of the week will appear in identical positions. The loose-leaf book eliminates the need to have two appointment books in the latter part of any year. The desk assistant can

add a supply of new loose-leaf sheets at regular intervals, removing the used sheets.

Before any appointments are entered, the "skeleton matrix" (Tanus, 1957) should be blocked out—lunch periods, buffer periods, vacations, days away from the office, a half-day every week for make-up appointments, meetings and postgraduate courses.

The appointment book should be used solely to record appointments with patients. It should not be a day book, call list, diary, memorandum book or personal file.

An appointment-service card can be employed for each patient. The 3 by 5 inch card bears the patient's name, telephone number, an estimation of the appointment times needed, dental work to be done at each visit, the dates of the appointments if made in the appointment book, and a few lines for remarks. Each appointment-service card is filed under one of six categories: (1) re-appoint—those needing further appointments to complete the necessary dentistry; (2) urgent—those needing appointments soon to insure against pain, discomfort or accident; (3) quick cancellation—those who live or work near the office and can with little notice assume the appointment time of a patient who has cancelled; (4) regular

—those who need dental service but not urgently; (5) delay—those who delay appointments by mutual consent, and (6) will call—those who do not respond to efforts to arrange appointments, and who may or may not return for services.

Cards in the first four categories are filed in chronological order, and appointments are made in the order of their appearance in the file. Cards in the last two categories are filed alphabetically for quick reference. Appointments are not made beyond a two-week period. As one or two days of scheduled appointments are consummated, the secretary utilizes the card file to call further patients for appointments; after scheduling has been completed, the appointment-services card is placed in the patient's envelope for use in the future.

This appointment method permits a steady flow of patients during the day, allows sufficient time to complete the necessary dental procedures without strain, and enables the dentist to classify and give preference to patients. The total future work load can be analyzed quickly. All pertinent data regarding the appointments for any patient can be listed, and patient response to appointments is recorded.

514 Ohio Building, Akron, Ohio

**The sitting dentist—  
overcoming postural defects and backache**

A. Cordel. *Tandlaegebl.* 61:682-695 Nov. 1957

For the practicing dentist, the standing position is tiring. The spinal column is twisted and the muscles abused by static muscular work. However, there is a rational solution to this problem, based on an investigation of anatomic and physiologic factors. The solution has been tested for more than 42 months and has proved practical. It is based on the idea that the practitioner should assume an anatomically correct sitting position on a chair correctly made. Everything else—including the patient—should be placed around the seated practitioner.



Figure 1 Good sitting position

The most practical sitting position (Fig. 1), with the back and abdominal muscles under least strain, is attained when the spinal column is maintained in the same position as when standing correctly. The back of the chair should support the fifth or fourth lumbar vertebrae.

The seat of the chair (Fig. 2) should give adequate support to about two thirds of the femur. The back of the chair and the height of the chair should be adjustable.

The patient is placed in a semireclining position (Fig. 3). The back of the operating chair must support adequately the weight of the patient's body. A new headrest permits the dentist to move closer to the operating chair.

At his left hand, the dentist has a table supporting his left arm and shoulder. The table has the appliances the dentist takes up with his left hand (such as burs, diamond disks and copper tubes).

The unit is placed at the dentist's right (Fig. 4) and has an adjustable support for his right arm and shoulder. A tray with spray and air syringes is suspended from an adjustable arm. For any standing work necessary, there is an extra table at normal height.



Figure 2 Adjustable chair (rights reserved)



Figure 3 With the dentist seated, the patient is placed in a semireclining position. A table supports dentist's left arm



Figure 4 The unit at dentist's right has an adjustable support for his right arm and shoulder

Patients usually assert that they relax much better in this position. Few patients find it uncomfortable. For the dentist, the sitting position is much less of a strain.

*Hovedgaden 41, Lyngby, Denmark*

#### Changes in oral tissues in aged patients

Ivaldo Rudino. *Minerva stomat.* 6:376-382 Dec. 1957

The increasing life span of the population of many countries has focused attention on geriatrics and gerodontics.

Disease patterns in aged patients differ from those in other age groups and require different

treatment. Each age period produces different changes in metabolism, cell vitality, endocrine balance, dietary pattern and mental processes. In aging persons, the solutions to dental and nutritional problems become more urgent. Painful oral soft tissues or teeth, edentulousness or ill-fitting dentures make eating less pleasurable. Loss of appetite develops which is often followed by malnutrition. Any nutritional disorder may lead to physical or mental deterioration.

Every aged patient presents certain complaints peculiar to and characteristic of changes in oral tissues. For the dentist, it is often difficult to determine whether the complaints of aged persons are the result of normal tissue changes, endocrine or nutritional deficiencies or psychic manifestations. The most common complaint results from the fact that the oral mucosa in aged persons is extremely friable and can be damaged easily. Traumatic ulcerations beneath dentures are a constant concern of the dentist and his aged patient. This is probably the most frequent cause of the aged patient's inability to tolerate his dentures.

During the period of degeneration of the oral tissues, the aged patient's biting strength reverts from about 300 pounds per square inch to about 50 pounds. Discussions between dentist and patient regarding the relationship of declining mouth efficiency to stomach disorders, weight problems and nutrition are of great value. Many older persons lose their ability to make reasonable judgments in regard to an adequate and balanced diet.

The gerodontist is in a strategic position to evaluate and correct many of the dietary and nutritional deficiencies that promote premature aging of tissues. He can reduce the number of prosthetic failures by his understanding of the various physical, psychic, metabolic and endocrine changes that occur in aging persons.

At the Dental School of the University of Cagliari, Italy, 250 patients from 65 to 94 years old were examined. There was no significant difference in the number of men and women. The majority of patients showed changes in oral tissues especially noticeable in the upper jaw, the temporomandibular joint, the few remaining teeth, the oral mucosa, the tongue, the salivary glands and the periodontium. Clinical examination re-

vealed that in most patients the epithelium tears easily and the connective tissue heals slowly. Canker sores, traumatic ulcers and angular cheilosis were found frequently under mild stress or even when stress was absent. Abnormal taste and a burning sensation in the mouth were the complaints of 80 per cent of aged women. These symptoms are related to low estrogenic levels and vitamin B avitaminosis.

The rapid ridge resorption beneath seemingly well-fitting dentures, observed in many aged patients, suggests the presence of certain systemic disorders, frequently a negative calcium balance.

Aging patients can be helped toward optimal oral and general health and a comparative happiness by dentists who are willing to understand their problems and have found the means of compensating for the effect of aging on oral tissues. The general feeling of well-being which returns after adequate nutrition and a healthy oral condition is often a guarantee against the recurrence of senile anorexia and its complications.

*Via Bainsizza 5, Cagliari, Sicily, Italy*

#### **Dental and oral surgical treatment during pregnancy**

Rudolf Zellner. *Deut. Stomat.* 7:552-556  
Sept. 1957

Hormonal upsets occur during puberty, menstruation, pregnancy and lactation. Only during pregnancy do these upsets last for a considerable time—a condition which has a specific bearing on dental and oral surgical treatment.

Frequently, an increase in caries, gingivitis and stomatitis can be observed. Pregnancy tumors may develop during the second or third month and increase gradually in size. In this period, the alveolar tissue shares in the general skeletal calcium depletion. Osteomalacia, caused by calcium-phosphorus (vitamin D) deficiency, occurs and is aggravated by each succeeding pregnancy.

Dental health is essential for the adequate nutrition of mother and child. The sources of oral sepsis, affecting the general health during pregnancy, are periapical and periodontal lesions. A consequence of oral sepsis is bacteremia which may cause chronic nephritis.

The best protection against the development of periodontal disease and caries in pregnant women is the constant maintenance of oral hygiene.

When dental or oral surgical treatment is indicated, certain precautions must be observed. During the initial three months no treatment should be attempted except in instances of emergency or for relief of unbearable pain. Nitrous oxide anesthesia should be avoided. Local anesthetics usually are well tolerated.

The most suitable time for dental or oral surgical treatment is from the fourth to the seventh month. All necessary conservative procedures should be completed. Appointments should be as short as possible. Tooth extractions should be performed serially under local anesthesia. Penicillin should be administered preoperatively.

If the patient is seen for the first time in late pregnancy, the cooperation of the patient's physician should be sought prior to any dental or oral surgical intervention.

Masticatory efficiency is important for the normal nutrition and the function of the body. If the pregnant woman is edentulous or has inefficient dentures, she should be encouraged to eat only soft food. Early recognition and correction of masticatory inefficiency will prevent esophageal or intestinal disturbances.

During pregnancy most women are deeply interested in the coming child's well-being. This is an opportunity for the dentist to point out where the mother has failed in dental and oral care, and how she can give her child a better chance to enjoy healthy teeth. The dentist may also suggest that other children of his patient receive adequate and regular dental treatment.

*Invalidenstrasse 87-89, Berlin N 4, Germany*

#### **Radioactive isotopes in the diagnosis of oral tumors**

P. Doering. *Schweizer.med.Wschr.* 87:1037-1045  
Aug. 10, 1957

A review of dental and medical literature is presented to clarify the various means by which radioactive isotopes can be used in the diagnosis of pathologic, especially malignant, processes. The course of inserted isotopes which emit gamma rays can be determined with a scintil-

ner which graphically records the particles emitted during disintegration of the radioactive element on scintigrams.

Isotopes which emit beta rays can be demonstrated with a Geiger counter placed close to the surface of the involved region.

At the Dental School of the Medical Faculty of the University of Göttingen, Germany, positron emitters such as Mn<sup>50</sup>, Cu<sup>64</sup> and As<sup>75</sup> are used to detect malignant tumors in the oral cavity. The results are promising. A special combination of two scintillation counters is used to register the emission of positrons in the form of positrocephalograms or asymmetrogammagrams.

Either the positron isotopes or any "tagged" organic substance can be used for detection and accurate localization of oral tumors.

Especially significant for cancer diagnosis have been the recent discoveries of the deviation of phosphorus and protein metabolisms in tumor tissues. Isotopes of phosphorus and tagged albumin have been used extensively for diagnostic purposes.

Radioactive isotopes can be utilized also for diagnosis of benign neoplasms.

An exhaustive compilation of pertinent literature (119 references) accompanies the article.

*Medizinische Universitätsklinik, Göttingen, Germany*

#### **Hygiene of the hands in dental practice**

Heiner Hoffman. *Oral Surg., Oral Med. & Oral Path.* 11:216-221 Feb. 1958

The types and quantities of germs on the skin are determined by the anatomic and physiologic characteristics of the tissue and by the occupation, hygienic practices and other factors in one's mode of life. It is impossible to sterilize the skin by any practical means. A minimum of 10,000 microorganisms per square centimeter are present on normal skin.

The general dental practitioner should adopt the following procedures in caring for his hands:

1. The hands should be kept clean. Dirt should be removed promptly.
2. The nails and cuticle should be kept well groomed.
3. Gloves should be worn outdoors during cold

weather or when frictional damage or pronounced soiling may be possible. Gloves should not fit too tightly.

4. The use of hand lotion or cream, especially during cold weather, is of value, but there is some question on bacteriologic grounds as to whether hand lotion or cream should be used during the working day while patients are being treated.

5. Lukewarm, rather than hot, water should be used for washing.

6. Frequent or vigorous use of the scrubbing brush on the hands should be avoided.

7. The regular use of a germicidal cleansing agent, both at home and in the office, is recommended.

8. Frequent direct contact with sensitizers, such as procaine hydrochloride, and with lipid solvents such as alcohol, acetone and xylene should be avoided.

9. At each patient sitting, the dentist, before inserting his hands in the patient's mouth, should inspect the lips, mouth and accessible parts of the pharynx for infectious lesions, using a strong light and a mouth mirror.

The hands should be washed with running water. The inside of the washbasin is contaminated and the hands should not contact it. The water and soap supply should be controlled by foot pedals or elbow or knee levers, if possible. If hand faucets must be used, they may be turned on with the bare hands, and turned off with the used towel, which then is discarded. Rings and wristwatch should be removed before washing. The washing procedure is as follows:

1. A clean orangewood stick is used to clean under the nails.
2. The hands are kept lowered over the bowl during the entire washing procedure.
3. The hands are wet with lukewarm running water.
4. A cleansing agent is applied generously to all surfaces. Systematic rubbing of all four sides of each finger and thumb should be done, using a firm rotary motion with the flat surface of the finger tips. The cleansing should be extended up the hands to above the wrists with the same rotary rubbing motion. Every part of the hand surface must be rubbed, including the fingernail areas and the interdigital folds.

5. The hands should be rinsed thoroughly, keeping them higher than the wrists if possible so that the water does not run from the unwashed area over the washed area.

6. Around and between each finger should be dried thoroughly, then the back and palm of the hands. The towel should not be allowed to touch any unwashed area. The last drying stroke is around the wrists. If paper towels are used, a fresh one for each hand is necessary. If a cloth towel is used, the first hand is dried with one end, and the second hand with the other end of the towel.

If this is the first wash of the office day, steps 4 and 5 are repeated before the hands are dried. The first wash of the day should take three minutes, whereas subsequent washes require one minute.

If it should become necessary, while treating a patient, to obtain an instrument or material from a cabinet, a fresh paper tissue is used as a glove to open and close the door or drawer. It is preferable, of course, to have the chair assistant perform this task.

*College of Dentistry, New York University, New York, N.Y.*

#### **Orthodontists and pedodontists in the treatment of periodontal disease**

Pedro Planas. *Parodontol.*, Zürich 11:120-131

Nov. 1957 [in Spanish]

A prerequisite for successful treatment of periodontal disease in children is better and closer cooperation between orthodontist, pedodontist and periodontist.

A thorough knowledge of the biologic factors and the physiology of occlusion is of equal importance in these three specialties. The establishment of an equilibrated occlusion is the major aim of orthodontic treatment and it plays a significant role in pedodontic and periodontic practice.

Orthodontic treatment of malposed teeth is different for patients with an equilibrated occlusion than for those in whom the occlusion is not equilibrated.

A review of pertinent case reports in dental literature reveals that there have been many

children in whom occlusal function was equilibrated in spite of untreated or inadequately treated malposed teeth. There have also been isolated instances in which nonequilibrated occlusion occurred as a result of orthodontic treatment.

It is necessary that orthodontists, pedodontists and periodontists be familiar with the technic of selective grinding in order to overcome the lack of masticatory stimulation resulting from the soft and partially artificial diet of our civilization.

*Claudio Coello 67, Madrid, Spain*

#### **The hot air method of sterilization of syringes and instruments**

W. H. Myers. *D.Delineator* 8:17-18 Winter 1957

An easy, practical method for sterilizing glass syringes involves the following steps:

1. The syringe is washed with soap and water, rinsed and dried in a nonfluffy cloth.
2. The syringe is lubricated with liquid parafin and methylated ether.
3. The syringe is assembled and checked to see that it works well.
4. Two needles are chosen, one fine for injecting and one mixing needle for the intravenous barbiturate. The needles are cleaned with warm water.
5. The needles are protected with sections of cellophane straw just long enough to protect the points. These are slipped as collars over the needles.
6. The syringe and needles are put into clear plastic bags or syringe envelopes and all the edges are sealed down with Sellotape.

7. If a batch of syringes is being sterilized, all may be placed in wire baskets. In the center of each basket is placed a dummy package exactly similar to the others, except that in the inside of the syringe barrel is placed, instead of the piston, a Brownes control tube type 3. (This is a glass cartridge containing a red fluid. When the heat treatment is satisfactory, the color changes from red through yellow to green.) The whole basket is placed in an ordinary gas, electric or solid fuel oven at 160° C. for one hour, or the equivalent 320° F. for the same period.

8. The basket is removed from the oven without touching the packages and the bags or envelopes are allowed to become elastic again by absorbing moisture from the air.

9. "Sterile—do not use if this seal is broken" is marked on a piece of Sellotape and the syringes are packed in boxes or in the anesthetic bag for future use. A label of a different color may be used each month so that the month of sterilization can be identified at once and the syringes used in rotation.

Syringes and instruments sterilized in this manner are pathologically sterile, easily portable, and easily stored dry.

126 Great Portland Street, London, W.1,  
England

#### **Allergy problems related to dentistry**

J. Warrick Thomas and Harold M. Syrop.  
*Ann. Allergy* 15:603-617 Nov.-Dec. 1957

Continued professional medicodental cooperation is necessary in handling patients with varied allergic manifestations secondary to foci of infection, and in controlling other disturbing symptoms. Many allergic conditions have been related to dentistry. The combined management of patients with these conditions has produced gratifying results in many instances. The allergist should appreciate the dental component in allergic manifestations, and the dentist should be on the lookout constantly for potential allergic reactions involving the lips, mouth, teeth and adjacent regions. It is the responsibility of both the physician and the dentist to see that such patients receive an adequate investigation and appropriate treatment.

Among dental materials which have been shown to produce allergic manifestations are the following: mercury in amalgam dental restorations, acrylic dentures, ammoniated dentifrice,

tetracaine hydrochloride and procaine hydrochloride.

Allergic manifestations in the oral cavity have been produced by many materials, among them the following: mint chewing gum; certain foods; protein substances; plant pollens; acrylic dentures and drugs containing phenolphthalein, barbiturate, salicylate, arsphenamine, belladonna, arsenic, mercury, bromides, codeine, quinine and sulfonamides, penicillin, sulfisoxazole, diphenylhydantoin sodium, phenobarbital and tetracycline hydrochloride.

Miller (1949) studied maxillary arch dimensions and occlusal relationships in nonallergic and allergic young adults to estimate the effect of nasal allergy on the bony structures of the dentofacial region; there was no evidence of a relationship of malocclusion to allergy. Duke emphasized the characteristic facial deformity in nasal allergy—underdevelopment of the malar prominences, presumably caused by underdevelopment of the sinuses, resulting in a relatively flat face. Bown and Balyeat reported that the adenoid facies often is due to allergy; they found overriding upper incisors and V-shaped palates in 24 per cent of 100 children suffering from chronic nasal allergy, and in only 5 per cent out of the 400 control patients.

Since some allergic conditions mimic other disease entities and must be differentiated from them, allergy must be considered in the differential diagnosis of perplexing dental and medical problems. Adequate history taking is of paramount importance. Too often the factor of allergy in the diagnosis and treatment of disease is taken too lightly because of a lack of appreciation of the serious complications resulting from untreated allergic conditions.

Seven case records illustrate the positive relation between dental foci of infection and allergic manifestations.

2031 Monument Avenue, Richmond, Va.

## New equipment

*The information reported here is obtained from manufacturers. Dental Abstracts does not assume responsibility for the accuracy of the information. The interested reader may direct his inquiry to the manufacturer.*

The new "Furna-matic" electric furnace is available in both "Large Flask" and "Twin Flask" models. The furnace has built-in photoelectric temperature controls which eliminate overheating and maintain constant, preset temperatures. The Furna-matic furnace can be set at any temperature between 250° and 1,600°F. and the full current turned on for quick warm up. *J. F. Jelenko & Co., Inc., 136 West Fifty-second Street, New York 19, N. Y.*



A portable air conditioner cools, heats and serves as a dehumidifier. The unit weighs 60 pounds. *Carrier Corp., Syracuse 1, N. Y.*

A low-priced, heavy-duty electric adding machine is recommended for use in the dental office. The instrument has a full keyboard. It is claimed that the time saved with this machine, over the time spent in computing just a few transactions a day by pencil, will more than pay for the machine. *Clary Corp., San Gabriel, Calif.*

With the new Brooks "Lectro-Waxer," set-ups and waxing may be completed quicker, and in one continuous operation. Temperature is regulated by a lever on top of the unit. An indicator light shows when the current is on and the degree of heat available. Two tips are available. *Stryker Mfg. Co., 420 Alcott Street, Kalamazoo, Mich.*



A new line of automatic, low temperature gas sterilizers is described in catalogue Section 5. The sterilizers are available as self-contained units, or the "Serox-O-Matic" control system may be adapted to existing installations for use with gas alone or with steam and gas alternately. The sterilizers operate at low temperature and humidity. *Wilmot Castle Co., 1921 East Henrietta Road, Rochester, N. Y.*

The "Mini-Line" electronic desk has an electronic pedestal providing space for tape recorder, intercom system, automatic pencil sharpener, and a control panel for the remote operation of lights, doors and signals. Power is supplied through a covered recessed AC outlet on the top rear center of the desk, which also provides connections for adding machines, typewriters and desk lamps. The desk is available in three colors, with linoleum or Formica top. *MagneTec Corp., 11785 Olympic Boulevard, Los Angeles 64, Calif.*



Doctoral and Masters' dissertations

*In this column each month are listed recent Doctoral and Masters' dissertations of dental interest, accepted by the dental schools or graduate schools in partial fulfillment for advanced degrees. Copies of many of these theses are available from the schools through interlibrary loan.*

Growth behavior of the human mandible: a serial study. *Martin J. Valins.* 1958. M.S.D. *Indiana University.*

Histological findings in pulp and periodontal tissues from teeth subjected to crown prosthesis procedures. *Héctor M. Dávila.* 1958. M.S.D. *Indiana University.*

Vertical dimension in denture construction. *Charles Loeck Bolender.* 1957. M.S. *State University of Iowa.*

Partial dentures and clasp design. *James William Schweiger.* 1957. M.S. *State University of Iowa.*

Impression procedures for edentulous cleft palate patients. *Norman Louis Zwickel.* 1957. M.S. *State University of Iowa.*

The relative efficiency of an altered method of teaching dental motor skills. *Benjamin Jay Brabb.* 1958. M.S. *University of Michigan.*

A clinical and histological investigation of healing of surgical mucoperiosteal flaps in humans. *Charles Alfred Kohler.* 1958. M.S. *University of Michigan.*

A method for measuring the dimensional changes of the wax pattern during the hygroscopic expansion. *Ernesto Arias-Teja.* 1958. M.S. *University of Michigan.*

Effects of paraformaldehyde preparations on the periapical tissues in non-vital pulpotomy procedures. *Ka Chor Wong.* 1958. M.S.D. *Northwestern University.*

An electromyographic and cephalometric roentgenographic investigation of the mandible and hyoid movements. *Billy G. Wood.* 1958. M.S.D. *Northwestern University.*

A study of some of the white lesions of the human oral mucous membrane. *Douglas Albert Anderson.* 1956. M.Sc. *Ohio State University.*

A study of topical administration of hydrocortisone acetate 9-alpha-fluorohydrocortisone acetate and pyridoxine hydrochloride upon oral lesions. *Peter Dante Ferrigno.* 1957. M.Sc. *Ohio State University.*

A cephalometric roentgenographic study of the intra-articular space of the temporomandibular joint in cases of Class I (Angle) and II (Angle) malocclusion. *Thomas Cook Gillis.* 1957. M.Sc. *Ohio State University.*

A radiographic analysis of profile. *Robert Wicks.* 1957. M.S. *University of Pittsburgh.*

Simple and complex orthodontic appliances: their effect on the lactobacillus plate count. *Walter Richardson.* 1957. M.S. *University of Tennessee.*

A cephalometric study of the occlusion in the permanent dentition of prematurely born children. *Joseph A. Petrone.* 1957. M.S. *University of Pittsburgh.*

A study on the reliability of locating Bolton point in cephalometric roentgenography. *Eric M. Antila.* 1958. M.S. *University of Pittsburgh.*

Evaluation of induction time, recovery time, and after effects of three anesthetic agents for oral surgery. *Richard P. Keim.* 1958. M.S. *University of Pittsburgh.*

A cephalometric appraisal of the dentofacial profile coincident with the treatment of Class II,

Division I malocclusion. *Frederick M. Keiper II.* 1958. m.s. University of Pittsburgh.

Pathologic alterations of the oral flora after antibiotic therapy (Pathologische Veränderungen der Mundflora unter der Antibiotikatherapie). *Baheddia Moussawi.* 1957. dr.med.dent. *Dental School, University of Mainz, Germany.*

Determination of anaerobic streptococci in the saliva of patients with caries or gingivitis (Auftreten anaerober Streptokokken bei Karies und entzündlichen Schleimhautprozessen im Speichel). *Horst Sebastian.* 1957. dr.med.dent. *Dental School, University of Mainz, Germany.*

Increase and decrease of the serum cholesterol level in patients with periapical or interdental foci of infection (Das Verhalten des Serumcholesterinspiegels in Trägern periapikaler und intradentaler Zahnherde). *Arthur Glinz.* 1957. dr.med.dent. *Dental School, University of Heidelberg, Germany.*

Micrometric investigations of the dimensional stability of several new rubber-base impression materials (Masstechnische Untersuchungen über die Originaltreue verschiedener neuartiger Gummiaindruckmassen). *Stanislaw Wintuszka.* 1957. dr.med.dent. *Dental School, University of Heidelberg, Germany.*

Comparative, clinical and experimental investigation of several dental amalgams recently introduced by the dental industry (Vergleichende klinische und experimentelle Untersuchungen an verschiedenen handelsüblichen Amalgamen die kürzlich eingeführt wurden). *Lothar Mertensmeier.* 1957. dr.med.dent. *University of Göttingen, Germany.*

Observations and experimental investigations of the phonetic adaptation of complete and partial dentures, including a technic for construction of upper dentures which support the formation of lingual sounds (Betrachtungen und experimentelle Untersuchungen zum Problem der phonetischen Adaption von totalem und partiellem Zahnersatz sowie die Angabe der Konstruktion eines die Bildung der Sprachlaute unterstützenden Zahnersatzes im Oberkieferbereich). *Lutz Walter Rudolf Kobes.* 1957. dr.med.dent. *University of Erlangen, Germany.*

Investigation of various root canal filling materials, especially of chloropercha-silver (Untersuchungen verschiedener Wurzelfüll-materialien mit der Berücksichtigung von Chloropercha-Silber). *Ernst Günther Haasis.* 1957. dr.med.dent. *University of Rostock, Germany.*

Effect of various antibiotics on tumor cells (Die Einwirkung von Antibiotika auf Tumorzellen). *Hans Christian Powalla.* 1957. dr.med.dent. *University of Cologne, Germany.*

"Roentgenostitis" of the jaws ("Röntgenostitis" der Kiefer). *Ruth Deimling.* 1957. dr.med.dent. *University of Munich, Germany.*

Practical advances in the technics of apicoectomy (Accorgimenti di tecnica operatoria nelle resezioni di apice). *G. Sincish.* 1957. dr.med.dent. *Dental School of the University of Milan, Italy.*

Chemotherapy in the treatment of malignant oral tumors (Farmaci odontoiatrici e lesioni cancerigne della mucosa orale). *G. Verga.* 1957. dr.med.dent. *Dental School of the University of Milan, Italy.*

Surgical preparation of the edentulous and atrophic maxilla prior to insertion of complete dentures (Possibilità operative nell'ambito dei mascellari per la preparazione del mascellare strofico edentulo per la protesi totale). *I. M. Fior.* 1957. dr.med.dent. *Dental School of the University of Milan, Italy.*

Auxiliary teeth in a teratoma (I denti ausiliari teratomici). *Luigi Berneri.* 1957. spec.odont. *School for Dental Specialties, Dental Institute, University of Pavia, Italy.*

Accurate occlusal relations in removable dentures (La protesi mobile as estremità libera). *Francesco Albrizio.* 1957. spec.odont. *School for Dental Specialties, University of Bari, Italy.*

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